

# BUTANE-PROPANE *News*

Headquarters for L.P. gas Information Since 1931

OCTOBER, 1954

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# *Right Now*

## THERE ARE MORE THAN 50,000,000 GALLONS OF



## IN RESERVE STORAGE FOR OUR CUSTOMERS THIS WINTER

**WARREN PETROLEUM CORPORATION • Tulsa, Oklahoma**

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When you ask yourself about  
LP-Gas systems, you  
may come up with...

## QUESTIONS LIKE THESE:

*Will they be easy to service?* Hackney LP-Gas Systems are designed for fast, easy servicing—with fittings mounted on the shoulder or end of the tank.

*How are they for looks?* You'll be proud to install good-looking Hackney Systems. Welds are always smooth and uniform. One-piece streamlined domes harmonize with tank contours... have no seams where rust can start... are extra heavy for complete valve protection.

*Are they ready to use on arrival?* Hackney Systems are furnished complete with quality fittings—are thoroughly cleaned and dried—are painted with a tough, long-lasting coating.

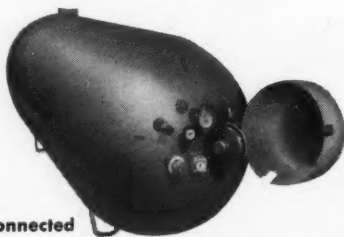
*Have they been fully tested?* Hackney Systems are made in full accordance with ASME codes and

NBFU regulations—are listed by UL. Welds are X-ray controlled for soundness and uniformity. Carefully inspected. Hydrostatically tested.

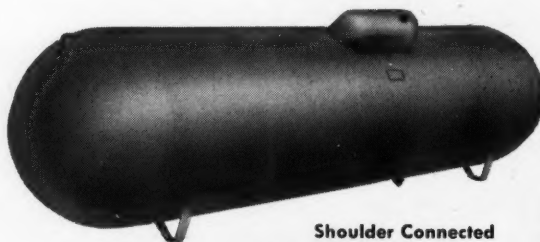
*Can I get just the size I need?* Hackney standard sizes are 250, 499, 640, 855, 995, 1135, 1199, 1745, 2550 and 3360 gallons. Can also furnish other sizes to meet your needs.

*Whose reputation stands behind these systems?*

Hackney LP-Gas Systems are another product of Pressed Steel Tank Company—makers of famous Hackney LP-Gas cylinders. They're designed and built to meet your needs for long-lasting, easy-to-service, economical-to-maintain systems. Write for further details.



End Connected



Shoulder Connected

## Pressed Steel Tank Company

Manufacturer of Hackney Products

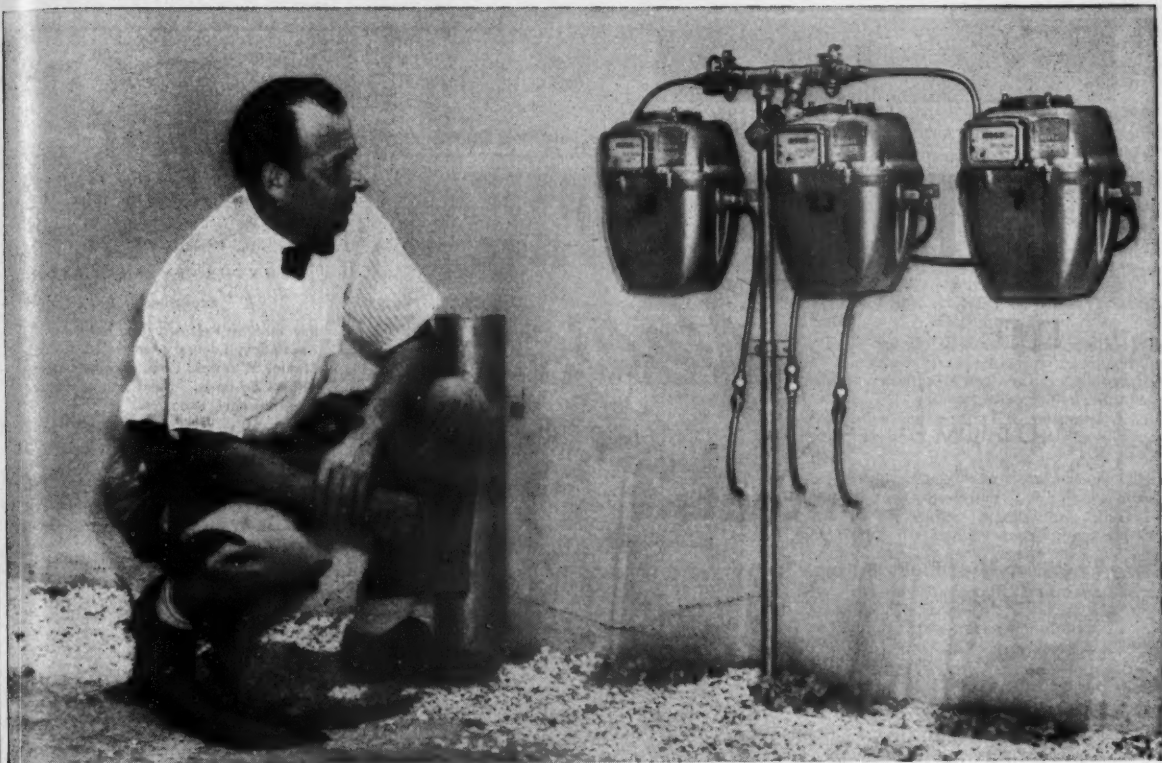
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LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS







**Sid Weiner says: "ROCKWELL LP-GAS METERS mean greater profits and satisfied accounts."**

### *The Voice of Experience . . .*

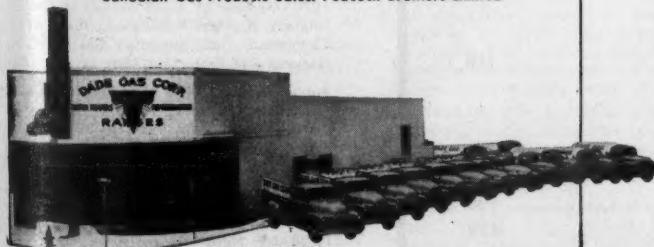
Dade Gas is another company that has built its business on Rockwell metered service. Why not let these *little* meters do an equally *big* job for you? They will cut distribution costs, increase your storage capacity and attract new customers. Write today for catalog, price list and full details.

YOU CAN RELY  ON ROCKWELL

#### **ROCKWELL MANUFACTURING COMPANY**

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Canadian Gas Products Sales: Peacock Brothers Limited



*Dade Gas Corp. truck fleet lines up alongside attractive company headquarters in Miami, Florida.*

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09-4923



OFFICE  
6900 N.W. 7th AVENUE  
MIAMI 36, FLORIDA

DISTRIBUTORS OF BOTTLED GAS AND APPLIANCES

July 17, 1954

Rockwell Manufacturing Co.  
Pittsburgh, Pa.

Gentlemen:

It has always been our thought that the best way to sell LP gas is by meters. We believe that people would rather pay their gas bills monthly than have to pay for 3 or 5 months supply in advance. We therefore have carried our sales campaign to the metered system.

Our campaign for metered system has paid off in both profits and satisfied accounts. I believe that we are one of the largest purchasers of Rockwell LP gas meters in the entire Southeastern area, because of our interest in large and small home projects, apartment houses, motels, hotels, and restaurants.

With today's population having to economize on many of the essential things, it is our belief that by having each consumer's LP gas needs, metered and billed monthly creates the psychological effect that spending \$3.00 or \$4.00 per month, seems to be much easier than paying \$10.00 or \$12.00 in one lump sum.

Also by using meters we always add a large capacity gas tank thus cutting down on our delivery costs and having a larger storage capacity out in the field.

We therefore feel that Rockwell LP gas meter means greater profit, and satisfied accounts.

Very Truly yours,  
*Sid Weiner*  
Sid Weiner

OCTOBER 1954

# BUTANE-PROPANE

NBP

## News

VOLUME 16 • NUMBER 10

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## Fuel Loss by Transfer

*South Dakota*

We note in a back issue in the section marked "Letters" that someone from Nebraska inquires as to the amount of fuel lost when venting tanks while filling.

Under test made by our company, we found that the amount of fuel lost during transfer by the vent methods varies from 3.3% to 4.5% of the amount of fuel transferred when there is 10-lb differential pressure to start with, the tank being filled having the lowest pressure, this being about the most ideal condition possible. Under most conditions it will run considerably higher than this, as a No. 31 drill size orifice will allow about 100,000 Btu's per hour under 6 oz of pressure.

We would like to know where you obtain the 2½ gal. per hour at 50-lb pressure? Suggest that you try it with a 20-lb drum by weight at 50-lb pressure and your findings will be considerably more than 2½ gal. per hour.

D.H.K.

Although our reply did not specifically state it, we were referring to the use of a standard 90% bleeder valve which has a No. 54 drill opening.

The 90 cu ft (2½ gal.) per hour propane flow rate was based on two sets of high pressure orifice tables published by leading burner manufacturers which we have found quite dependable in actual practice. They also check with the orifice flow formula set forth in the AGA manual "Gaseous Fuels." The writer made many test runs in American Liquid Gas Corp.'s L. P. gas orchard heaters and found the calculated flow rates and actual flow rates checked quite well. Actual flow rates were determined by weighing the fuel used over set periods of time at set burner pressures between 5 and 35 lb.

Since the rate of flow through an orifice varies as the square root of the pressure of the gas entering the orifice, the increase in the rate of flow does not increase as rapidly as might be expected on first thought. For instance the flow at 36-lb pressure is only double that at 9-lb pressure, other factors being equal.

Even though the flow rate of propane through a No. 31 orifice is about 100,600 Btu's per hour at 6 oz pressure, at 50-lb pressure the flow is about 1,160,000 Btu's or 12.7 gal. per hour.

It is still agreed that if all factors of time, safety, waste of fuel, etc., are considered, venting fuel, whether through a No. 54 drill, a No. 31 drill or some other valve, may not be the low cost way of fuel transfer.—Ed.

## Flexible Connections

*Pennsylvania*

What type of flexible hose connections are recommended for use with L. P. gas, metallic or non-metallic?

Are recommendations different for propane vapor and propane liquid?

P.A.J.

Since you speak of both liquid and vapor propane, we assume you are referring to flexible connections for high pressure lines.

Both the metallic and non-metallic type of flexible hose connections are used for high pressure lines, where permitted. Some L. P. gas codes do not permit flexible hose connections in permanent high pressure lines, except for the transfer hose lines.

Metal flexible hose connections have greater resistance to heat and damage than the non-metallic connections and are therefore favored by some plant owners.

The metal flexible connectors are generally favored for low pressure inside connections to ranges and other appliances. However, local codes should be consulted regarding the approved practice.

High pressure lines require the same hose for either liquid or vapor.—Ed.

## Testing for Leaks

*British Columbia*

During the past three years we have leased propane storage space from a utility, and the utility has unloaded all tank cars received. Now we are about to install our own storage facilities, and would appreciate your advice.

We are familiar with the use of a compressor with which tank cars are unloaded, but our questions are these:

1. When the new storage tank is installed, can we test for leaks around such fittings as safety valves, liquid outlet connections, vapor return connections and gauges by pumping air into the tank? Will we accumulate excessive amounts of moisture this way? The tank's capacity is 22,050 U. S. wg.

2. Should we then pump out as much air as possible before starting to transfer propane to the new tank? Are we correct in assuming that a hazard gas-air mixture will result in the tank during the first transfer of propane into a new storage tank?

H.F.C.

The tank can be pressured with compressed air to test for leaks around the safety relief valves and other connections. Moisture will be pumped into the tank with the air and as the pressure increases it will condense in the tank. After testing for leaks the air should be released from the tank and the pressure reduced back to atmospheric. The manhole may then be removed and moisture swabbed out of the tank. If proper attention is given to the



# PRODUCT NEWS from AMERICAN-Standard

*A review of products in the news and important sales points worth remembering*



## NEW STANFLAME GAS CONVERSION BURNER

The completely redesigned New Stanflame is a real profit-builder for you. It's priced right—costs no more than burners that offer less in quality and design features. Factory-assembled and pre-wired to reduce installation time and labor costs to a minimum. Available with 60,000 to 325,000 Btu inputs, the New Stanflame fits the vast majority of boilers, furnaces and winter air conditioners. Customer-pleasing features include convenient runner-type pilot ignition, quiet-operating Detroit Bi-flex gas valve and timed-cycling thermostat. The New Stanflame is A.G.A. listed for all types of gas.



## EMPIRE GAS BOILERS

The Empire by American-Standard is one of the most popular series of gas boilers on the market. And no wonder! Empire boilers are precision-made of cast iron, offering both low first cost and low operating cost. They are highly responsive, provide quick, even, clean heat... with a minimum of fuel. Compact and attractive, Empire boilers are ideal for basement, utility room or laundry installation. Available in a practical range of sizes and models for hot water or steam, and for any type of gas. Cast iron sections are factory-assembled, as are piping and control sub-assemblies—features that assure unusually quick and easy installation.

**Ask Your Wholesale Distributor  
for Complete Details**

The above products are just two of the many customer-pleasing products from the broad American-Standard line. Your distributor will be glad to give you complete information. Remember, American-Standard offers everything you'll need to sell today's growing modernization market—top quality products, sound merchandising ideas, extensive advertising.



# AMERICAN-Standard

**American Radiator & Standard Sanitary Corporation, P. O. Box 1226, Pittsburgh 30, Pa.**

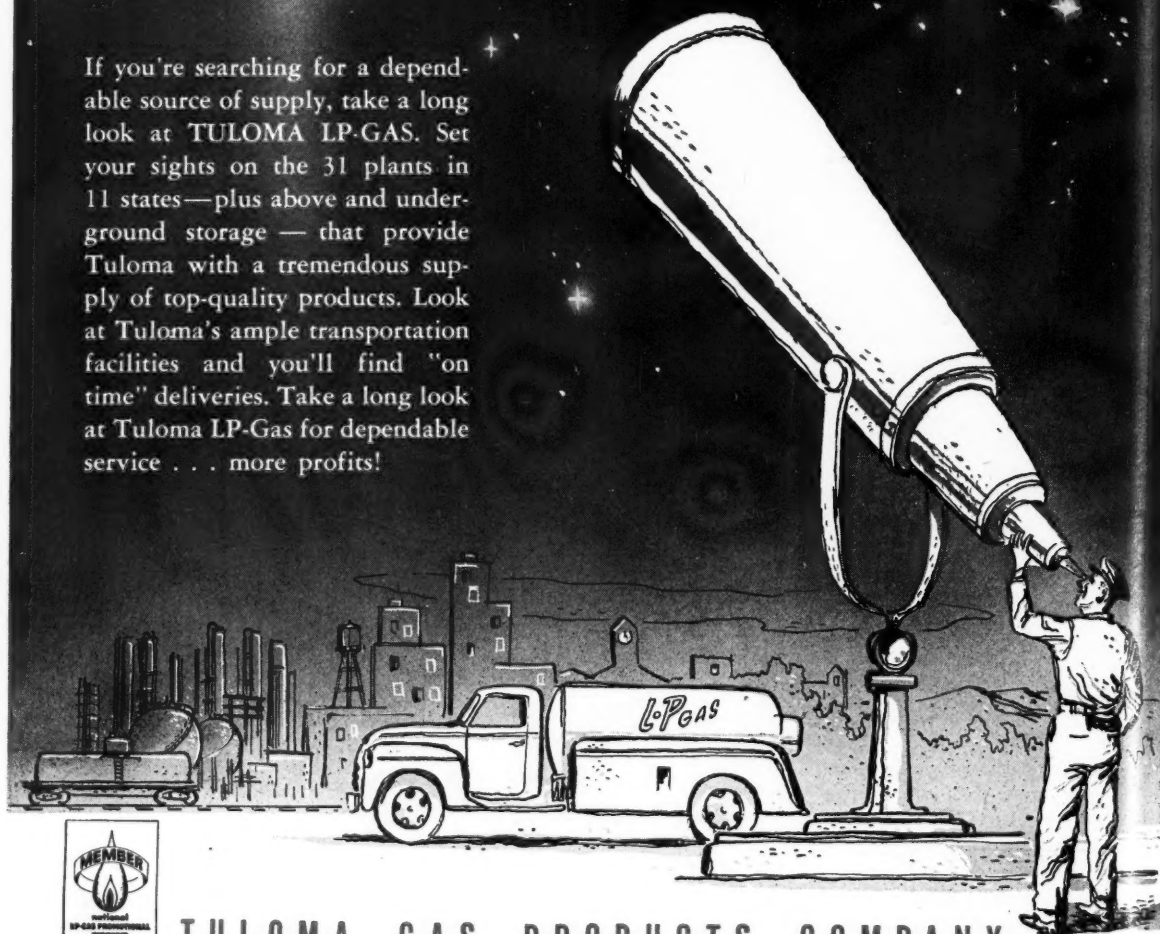
*Serving home and industry:* AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWANEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS



# *Tuloma LP Gas*

## Take a long look... at DEPENDABILITY

If you're searching for a dependable source of supply, take a long look at TULOMA LP-GAS. Set your sights on the 31 plants in 11 states—plus above and underground storage — that provide Tuloma with a tremendous supply of top-quality products. Look at Tuloma's ample transportation facilities and you'll find "on time" deliveries. Take a long look at Tuloma LP-Gas for dependable service . . . more profits!



**TULOMA GAS PRODUCTS COMPANY**

*A Wholly Owned Subsidiary of Standard Oil Company (Indiana)*

PHONE 2-3261 • BOX 591 • STANOLIND BUILDING • TULSA 2, OKLAHOMA



OCTOBER



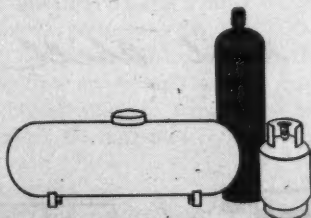
## Beyond the Mains

### WHAT ABOUT THIS CHEAP ATOMIC POWER?

WILL CHEAP ATOMIC POWER PUT LPG OUT OF BUSINESS? We read that electricity will soon be flowing out of atomic power plants now under construction in England and France, where the supply of native coal is fast being depleted. In our own country, with 75 years supply of good coal still in the ground and oil and gas available at less than the cost of coal, our government, through the Atomic Energy Commission, is footing most of the bill for an atomic energy power plant soon to be built in the vicinity of Pittsburgh, where there are abundant supplies of both coal and oil.

We also learn from our current science reading that a recent laboratory development in atomic energy is a "breeder" reactor which produces new atomic fuel about as fast as it uses up the original charge. How soon will this development reach the commercial stage? Will it replace all other forms of energy for the generation of electricity? If so, what will be the results on the competitive price of electricity compared with other forms of energy?

THIS "NO COST" STUFF IS A PIPE DREAM OF THE FIRST MAGNITUDE. Those of us who are old enough to remember have heard the same story about hydro-electric power. "There is no cost to falling water." No? Then explain if you can the statement of the Bureau of Water & Power of the city of Los Angeles that it can feed power into its metropolitan distribution lines from the local oil-fired steam plants at less cost than it can from the generators at Boulder dam. The answer is, of course, that there are many costs involved in every form of electric generation, but the cost of producing electricity is only a minor ingredient in the total cost of delivering the power to the consumer. The big cost is transmission, the principle ingredients of which are labor and debt. These costs are not going down. Hydro-electric power is cheap only where the cost of transmission is low -- close to the point of production.



Continued ...



Continued ...



## Beyond the Mains

The Reader's Digest reminds us (September, 1954, page 82) that in 1952 the average American householder paid 2.77 cents per kilowatt hour for electric current, and that of this the coal-burning plants spent only .33 cents for fuel. Even if the primary energy used to produce the electricity cost nothing, the consumer's bill would not be much lower than it is. It will pay anyone interested in the future of the L. P. gas business to read the article from which the above material is quoted. The cost of atomically produced electricity will not put us out of business. There is no significant reduction in sight.

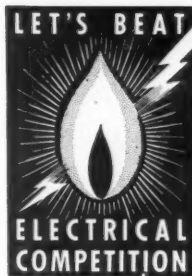
WE HAVE NOTHING TO FEAR FROM ATOMIC POWER. But we have something very important to learn from the electrical industry's interest in atomic power and every other development that comes out of any form of research. One of the primary preoccupations of our competitor is an unending effort to devise better and more efficient methods of performing all operations involved in the business of putting power into the homes and places of business of power consumers. This is the reason behind the fact that power costs have increased so little through the years, in spite of the same increase in cost of labor and materials that have contributed to the greater increases in cost shown in other industries.

The L. P. gas industry is still young. There is still much that we must learn about efficiency and cost reduction in getting our product from the ground to its final conversion into useful heat. We are competing with an industry that is organized throughout on a basis of ever increasing efficiency. To avoid the eventual meeting of rising costs and diminishing profits we must follow that same course. It is time to do less worrying and more work.

*Carl Abell*



**We have no objection to electrical competition so long as it is fair and grounded in the truth. But competitors who issue misstatements and distort the facts should beware.**



# When You Must Fight Arrange to Win

By Carl Abell

SO YOU think you should do something drastic about your electrical competition! Like starting a lawsuit, or rushing into print to call public attention to misstatements and unethical business conduct. Perhaps you should. Sometimes there seems to be no other way that is effective. But before you do, you should be sure of several points.

First, is this course necessary? Second, if you do start a public fight, can you win? And third, if you do win, will the victory be worth what it costs?

Before we go into a detailed discussion of these points, let us first look at some of the facts of competition.

We should have no legitimate gripe against competition, electrical or otherwise, so long as it is fair, clean, and grounded in the truth. We expect competition; it is the American way of life.

But unfortunately there are people in the business world who do not have the moral strength to stick to the truth when they feel that they can get away with a misstatement that gives them a competitive advantage. This lack of personal integrity is not confined to any one industry, although each of us is inclined to think that his own particular group of competitors includes an abnormally high share of sharpshooters, chisellers, and downright liars.

All of this is brought out to provide background for the generally accepted business philosophy that the way to meet competition is to ignore it, and concentrate on working to outsell it. Paying attention to competitors' statements during sales inter-

views leads to arguments, generally with the prospective customer. Winning such an argument might provide a very satisfying moral victory, but it seldom leaves anything tangible to put in the cash register, or to augment the volume through the storage tanks.

Suppose that your competitor does go overboard now and then in interpreting a fact in his own favor, or even in giving the fact a mild stretch. That situation is not serious. It can generally be neatly sidetracked by the well-known "yes, but" technique, like "That may be so in some cases, but let's find out what the facts are in connection with your own case."

You have not called your competitor a liar, nor inferred that your prospect is a fool for accepting a wrong statement. You have accepted the possibility that the other man might be right under some circumstances, and then shown an interest in the particular problem of your prospect, who will be the first to admit that his own problem is different and more important than any other problem on earth, and is certainly worthy of individual analysis. You have given yourself an advantage over your competitor without calling any names, without making anybody mad, and without losing any time. And if you can do a better job than your competitor in presenting your sales story, backing it up with evidence that your prospect is willing to accept as conclusive, you have a better chance to make the sale than the man who failed to get to the core of the customer's problem, and therefore made a statement that did not fit the case.

The customer now trusts you, which would not be the case if you had given him an argument and thereby indirectly ridiculed his judgment. People instinctively trust salesmen who take the trouble to be fair and considerate of peoples' personal feelings, and they just love salesmen who consider their individual problems important and try to work things out to the advantage of their customers.

Now let's go to the extreme. Suppose you have a competitor who repeatedly makes bald-faced lies, and who is constantly resorting to scare techniques and other forms of unethical competitive tactics. Unfortunately there have been several such cases affecting people in our industry. We would not know why, but the majority of those which have come to our attention have been perpetrated by local electrical cooperatives, or state associations of electrical coops. Skipping the moral aspects of the situation, and recognizing that coops have no monopoly on poor sportsmanship in business, let us look into some of the practical aspects of the matter.

First of all; to be effective in producing sales, misrepresentation must be widespread, and it must be accepted as the truth. Unless it reaches and affects a large segment of the customers and prospective customers, it can be handled fairly well on an individual basis, as outlined above, plus a heart-to-heart interview with the perpetrator, to let him know that you are aware of his deviations and convince him that you are in a position to make things embarrassing.

Broadcasting of misrepresentations



9 out of 10 clever Sacramento wives

# Cook better, spend less, using P. G. and E. natural gas!



Leave it to the girls to know a bargain! Sacramento homemakers have discovered that gas cooking gives you instant, accurate, visible heat. And you pay less for it than for any other fuel. Less than 3¢ a day! Why not get the most for your cooking money ... take full advantage of low P. G. and E. rates with a new gas range. Fully automatic—modern as tomorrow. See your appliance dealer today.

*Natural gas is cheap in Sacramento!*

**P. G. and E.**

PACIFIC GAS AND ELECTRIC COMPANY

is something serious, particularly if the misstatements are distributed through the mail. There are laws prohibiting the use of the mails to obtain money under false pretenses, and there is pronounced public sentiment against the use of any form of public communication to deceive. There are also laws that can be invoked against the issuing of any public misstatements intended to damage other people. The principle is the same whether the damage is to the reputation of a person, or to the commercial opportunities of a business organization. The case can be tried in the courts, and if successfully prosecuted, damages can be recovered.

Legal proceedings are long and expensive, and it is generally considered best to avoid them if there is a quicker and sufficiently effective way to cure the situation, which there usually is. We have heard of only two instances in which these cases of misrepresentation have been sufficiently flagrant and persistent that the injured parties have considered it advisable to file suits. The Kentucky LPGA has a suit pending against individuals and units of the Kentucky Rural Electrification Association, and two LPG distributors in Missouri have jointly filed charges against their local rural electrical cooperative. In both cases the plaintiffs have asked for court orders requiring the offenders to cease and desist from certain objectionable practices, and in addition they are asking for heavy damages.

A high percentage of such commercial libel suits fall by the wayside. They are either dropped, or are lost because the plaintiffs fail to prove their cases. Nevertheless, they generally have their value. There is always the possibility, when such a suit is filed, that it may be won, hence the mere filing of the suit will nearly always result in correcting the condition on which the complaint is based. The offender cannot afford to lose the suit. Merely defending it can be expensive, and whether it is won or lost, the defendant has been publicly charged with being a liar, which is damaging to the organization involved, and to the individuals who performed the acts on which the complaint is based. Lawsuits tend to break down public confidence, and nobody likes the damaging effects.

From the standpoint of the injured party, lawsuits are not desirable because of the uncertainty of their outcome, the loss of time involved in their prosecution, and the expense. There are other ways of handling these situations which are nearly always equally effective, besides being quicker and far less expensive. They consist essentially of "trial by the public," and if it is necessary to resort to this form of defense, they should be made just as public as possible.

Nobody likes to be proved a liar, even before one or two people. When it is made a matter of public record before the people of a whole community, it can really become embarrassing. And any person who is addicted to misstatements or unethical competitive practices will straighten out fast if he knows that he will be called to task before the very people he is trying to influence.

Offenders of this category are always bullies at heart, and they react just like the bully that you knew in your school days. They will take unfair advantage as long as they feel sure that there will be no comeback. But they do not want a fight; they just want an advantage. One healthy swing to the jaw ends the school bullying, and a healthy poke in the ego or the pocket-book, if done out in public, straightens out the competitive chiseler.

Let's look at some case histories. Case 1 is reported by *The Skelgaser*, the Skelgas dealer publication. The REA cooperative at Darlington, Wis., made a one-sided demonstration of cooking on gas and electric ranges. The *Darlington Republican Journal* published the coop's report on these tests, including the statement that electricity beat gas in both economy and cooking speed in tests conducted by a Wisconsin electric cooperative appliance expert.

The publication of this article was damaging to the business of the Darlington Appliance & Skelgas Service. Charles Clayton and J. C. Terpstra of that company wrote a letter, which was published in a later edition, to the editor of the newspaper, quoting the Beltsville test report (USDA Technical Bulletin 1073) to prove that L. P. gas is faster than electricity. Then they challenged the Wisconsin REA to conduct an impartial

*Today's typical Californian pays*

# Only eight cents a day for convenient electric cooking!



**Electric Cooking is Budget Cooking**—thanks to today's highly efficient heating elements, and low P. G. and E. rates! Just eight cents a day is all it costs, in the average California kitchen, for the convenience of modern electric cooking. See your appliance dealer today—about a beautiful, time-saving, work-saving electric range.

*Electricity is cheap in California!*

**P. G. & E.**  
PACIFIC GAS AND ELECTRIC COMPANY

Seattle Public Library

OCT 5 1954

OCTOBER, 1954

33

# Alert Watertown dealer converts competitor's

public test of the comparative advantages of Skelgas and electricity for both performance and cost. In 30 days the challenge was unanswered.

There are several points here that should be noted. The newspaper had published a misleading statement, as shown by the quotation from the Higher Authority. The editor was willing, as he should have been, to publish a correction. Rather than publish his own admission of error, he preferred to use the statement of an interested party on the other side of the argument. He went all the way, publishing the quotation and the challenge to make the impartial test. The editor was saved from an embarrassing situation, and the truth was emphasized before the same readers who might have seen the previous article. It left the advantage all with Darlington Appliance & Skelgas Service, and put the REA people on notice to refrain from making such statements in the future.

Case 2. The April, 1954, issue of *Watts News*, published by Codington-Clark Electric Cooperative, Watertown, S. D., contained a two-page article titled "Electricity or Gas?" Whether intentional or not, this article contained a choice collection of half truths and complete untruths. It went to considerable lengths also to put over the impression that L. P. gas is dangerous, and that LPG service is undependable.

As this cooperative provides the only electrical service in the area, their publication went to all of the customers of Mervin Olson, owner of the Olson Appliance Co. and the Watertown Bottlegas Co. It was a heavy blow, and while it was aimed below the belt, this fact might not be apparent to the average reader. The public is conditioned to believe in electrical miracles, so people are less inclined to make critical examination of statements about electricity than about many other products.

This situation gave Mr. Olson a real problem. He had to shut off the flow of misinformation to his custom-

ers and prospective customers. He could not use the same medium to carry his counterattack, because that was published and distributed by the competitor who was giving out the misinformation. The other choice was to use the local newspaper, which reached a considerable group—probably the majority—of the people who were being fed with the objectionable propaganda. Since the publisher of the paper would naturally not wish to become involved in a competitive argument, and there was no good reason why he should, Mr. Olson bought advertising space in four successive issues, and cleared the record, point by point.

His technique was admirable. He needed to use an editorial type advertisement to tell the story, but to make it stand out prominently he used double column lines on a news page set in single column width. The ads were large enough that they would be hard to miss.

Does he open by knocking electricity? No. He pays it a tribute. He feels that he must protect his several hundred customers who have been enjoying the savings and convenience of bottled gas. Then he proceeds to quote the questionable statements (knowing that the readers would not go back and read the misleading article) and present the facts, backed up each time by local or national authority, and turning each point into a convincing sales argument for L. P. gas. Left, right, left, he deals his blows:

The "author" of the misstatements bases his economy argument on a bulletin published in Washington, and his cost examples on a price for L. P. gas that is higher than the local customers pay. Let's get down to local cases and find out how much the local customers pay. Come in and we will show you the records—or better still, ask some of the local customers.

The "author" of the questionable article makes much of the supposed extra cost of plumbing and venting

the gas water heater, but ignores the extra cost of wiring for the electric water heater. As practicing plumbers, we have installed many of both types, and on the average there is almost no difference in installation cost.

The "author" claims that propane is often diluted with some other gas with lower Btu content; the purchaser never knows what he is getting. Actually, the only thing it can be "diluted" with is butane, which has a higher Btu content, but this mixture is not used locally because it is not satisfactory in cold weather.

The "author" builds a fanciful picture of the difficulties of delivering LPG during storms. Pitiful, if true. There have been very few cases in which the customers did not have sufficient reserve to last out a storm. Did your power line ever go down during one of those storms? Did you have a reserve of electricity to carry you through? Not just you, but also everybody on the line. And did any of your neighbors lose any chicks in electric brooders?

The "author" depicts the terrible things that can happen with gas when the pilot goes out, and shows the inherent safety of automatic electric appliances. No automatic gas appliance can pass the American Gas Association or Underwriters Laboratories' tests without being equipped with a device that turns out all the gas to the burner when the pilot goes out. We sell only AGA approved appliances, and a good gas man will not install any gas equipment that is not so approved and equipped.

By the way, this is what the National Fire Protection Association says about the comparative frequency and dollar loss of fires originating from electricity and from gas. And Mr. Olson quotes from the official report. Ten times as many fires from electrical sources as from gas.

So it goes. And Mr. Olson is not content to merely win the argument. After converting all of his competitor's misstatements into sales points for propane, he asks for an order. He



# Information to sales points for LPG.

offers to give the first 10 people who bring the complete series of four articles to his office a credit slip for \$100 on the purchase of a propane storage tank.

An alert LPG dealer association can be of inestimable service in blocking competition that is unethical or just plain tough. Here is an example of effective work done by George Requa of the Western Liquid Gas Association. We make no claim that the competition was unethical, or based on misstatements, but there is no doubt that it was tough. Mr. Requa's July, 1953, bulletin to dealers included the following extract:

## ALL DEALERS NORTHERN CALIFORNIA HAVE YOU EVER SEEN RED?

"YOUR BEST ELECTRIC RANGE SALES OPPORTUNITY IN MORE THAN 10 YEARS. Your only investment is follow-through.

"OPERATION SWITCH is a promotion to replace as many as possible of the more than 65,000 liquid petroleum gas ranges now being used in Northern California.

"OPERATION SWITCH is a pin-pointed electric range promotion.

"The Pacific Gas and Electric Co. will send out 200,000 colorful bill stuffers to your customers. These stuffers will tell the story of why it is better to switch from LPG to electricity. These mailings will begin the weeks of July 13th, 20th, and 27th.

"All prospects will be asked to fill out a reply card and send it to the P. G. & E. Co., after which the cards will be separated by the preference of the range the customer indicates. These prospect cards will be forwarded to the respective dealers in the territory concerned as well as to the wholesale distributor of the product in question. We at Graybar are ready and willing to help you make more range sales by helping you follow through with the customer in question."

The above paragraphs in quotations are excerpts from a letter which has just been brought to our atten-

tion written by Graybar Electric Co. to Hotpoint dealers. No doubt other electric range wholesalers have written similar letters to their dealers.

There was a follow-up in August:

As we understand OPERATION SWITCH, referred to in our July bulletin, the electrical range dealer will allow \$100 trade-in on a gas range of any vintage. They probably do not tell the prospective customer that it may cost that \$100, or possibly more, to wire the house for an electric range, if the house is not already so equipped.

The P. G. & E. Co. is advertising a cost for cooking of 8 cents per day; on a 30 day basis that is \$2.40 per month. You can do it for less on L. P. gas, can you not? Now let's do a little more figuring.

We know that electric rates will vary according to districts, and type of service, but the following P. G. & E. schedule, in effect in the Southwest coastal area, is probably typical:

### Cents

Meter service charge.....	50.0 per month
First 35 kw.....	3.5-3.9 per kw
Next 165 kw.....	2.5 per kw
All kw above 200.....	1.2 per kw

According to the best information we can get from the local power company, the average consumption for cooking alone is 200 to 300 kw per month. Taking only 200 kw, at the above rates, we have:

Service charge .....	.50
53 kw at 3.5.....	1.225
165 kw at 2.5.....	4.125

Total cooking costs.....5.85 per month

It would appear that P. G. & E. has figured 200 kw at the lowest rate of 1.2 per kw to arrive at its advertised cost of 8 cents per day, or \$2.40 per month. Thus, the company apparently does not explain to the customer that the other charges must be paid for somehow.

Furthermore, in our discussion with the local power people we were

told that the average cost for cooking alone, on electricity, would run from \$3 to \$3.50 per month, and for lights and cooking it would average \$7 to \$8 per month.

Anyway that you figure it, you should be able to prove to your customer that L. P. gas can do it cheaper and better, and you should be able to successfully use P. G. & E's own advertised cost against them to your advantage.

Then the Northern California dealers got one of those breaks that comes only once. The Pacific Gas and Electric Co. had been advertising through most of its territory, in connection with "Operation Switch," that "it costs only 8 cents per day to cook with electricity." But in Sacramento, where the electrical service is supplied by the municipality and where P. G. & E. was only able to offer gas, the company ran large newspaper advertisements saying that "it costs only 3 cents per day to cook with gas." That was natural gas.

Mr. Requa promptly supplied all of the LPG dealers with copies of both ads. "Operation Switch" promptly wilted and died on the vine. Obviously, if piped natural gas was so desirable in Sacramento, the rural version that comes in tanks could not be so undesirable in the hinterland.

These dealers did not need to engage in counter-advertising. They merely took advantage of the advertising break that the competitor had made available for them. More effective by far, and the strategy of the association made it effective throughout the territory.

All of which emphasizes the basic points: do not become involved in arguments with individual customers. Do not enter into legal or publicly circulated arguments unless your competitor makes it necessary. Be sure you can win any argument that you start, and that the customers can see that you are doing this in their behalf. And finally, don't just win the argument; do something to convert the victory into sales.

## ATTENTION REA AND BOTTLE GAS USERS! WAR IS DECLARED!

But don't be alarmed—we promise not to use "H" or "A" bombs. . . .

If you haven't read "ELECTRICITY OR GAS?" in the "WATTS NEWS" (Cordington-Clark REA publication for April '54), please do so. It appears to be a bold attempt to knock out bottle gas and make way for electrical consuming appliances.

Be assured we have no quarrel with the use of electricity on the farm or anywhere else. It is a wonderful product and can do so much for you. It is only too bad it has not been available to you as long as you have been farming. As for electric appliances, they serve you well and we have never knocked them to anybody.

Then, why are we so excited????? Because we feel we must defend our several hundred customers who have been enjoying the savings and conveniences of bottle gas so that we may continue to give them the good service we have in the past.

Competition hardly ever reaches this stage until someone's practices become unethical and untruthful and tend to put fear in the people's minds.

We will give you the facts as we see them, by using direct quotations from the article.

It appears to us the author of this article has very little knowledge of the properties and uses of L. P. gas. He is swinging his arms in every direction to influence you into believing that there is no economy in the use of L. P. gas and that it is poison or dynamite to have around.

First, we would like to clear up the difference in cost between electricity and bottle gas for the range, water heater, and refrigerator. It is only fair that we use our price of 5.8 cents per pound delivered. This is slightly lower than the cost of 6.5¢ he quoted, but will not affect the results to any great extent.

The writer says he is basing his figures on those "supplied by the government after its recently completed tests."

Now, how could it be more fair than to base our comparison figures on actual customers usage.

For a range: Our customers get all the way from two months to six months on 100 lbs. of Marvelgas. The average is approximately three months, but we'll use two and one-half months which would amount to about 40 lbs. per month at 5.8¢ per pound, or \$2.32, and \$1.25 if they had a bulk tank for heating or for tractor fuel.

It is very amusing what this REA writer has to say about deep well cookers in ranges. We will continue this tomorrow and give our answer. Look forward to reading it.

**Mervin Olson, Your Marvelgas Dealer,  
owner of Olson Appliance Company  
and the Watertown Bottle Gas Co.**

Save this copy . . . it may be worth dollars to you . . .

### INSTALLMENT NO. 2

## ATTENTION REA AND BOTTLE GAS USERS — KNOW THE FACTS ABOUT BOTTLE GAS!

It is very amusing what the author of "Electricity or Gas?" Cordington Clark REA "WATTS NEWS" April, 1954, has to say about "deep well cookers." But first, we're quote, "He also assumes that the electric range user will not use the economy cooker, or deep well," as the gas models do not have them. In that way, the electric range is only twice as efficient or requires only half of the BTU's as the gas range. Actually, with an electric range with the deep well cooker, the electric range becomes three times as efficient."

Confusing, isn't it? Well, first, let me say, we have sold bottle gas ranges with deep well cookers since before the war, and they have been made years longer than that. I have had one in my home since 1940. If the writer wants proof, he is welcome to drop in to the store and see one.

As for efficiency, I can't understand how he rates an electric range with a deep well cooker three times as efficient as gas. We know of no one heating their home with 2¢ electricity!

It is economical to heat your home with bulk propane gas and we know many people who do.

Did you know that electricity would have to cost approximately three-fourths of 1¢ per kilowatt to equal bulk propane for cooking, and water heating? Here, again, he seems quite sure that propane gas dealers sell you a mixed gas rather than pure propane gas, and that you have no way of knowing how many BTU's you are getting per pound of propane. And then he says, "Electricity, on the other hand, has always the same number of BTU's per KWH." We all know that electrical equipment is slowed up considerably when line voltage is low and that much electrical equipment is damaged from operating on too low or too high line voltage!

Tomorrow things gets a little muddy, be sure to read how we clear it up.

**Mervin Olson, Your Marvelgas Dealer,  
owner of Olson Appliance Company  
and the Watertown Bottle Gas Co.**

Save this copy . . . it may be worth dollars to you . . .

### INSTALLMENT NO. 3

## ATTENTION REA AND BOTTLE GAS USERS — KNOW THE FACTS ABOUT BOTTLE GAS!

It is indeed amusing to read in "Electricity or Gas" Watts News Apr. 1954, "when the consumer needs more gas, he has to notify his gas supplier and make sure the roads are in shape so the delivery can be made. If the roads are blocked by snow, the consumer pays for opening them and the consumer goes out to pull the stuck gas truck out of the mud. Electricity, on the other hand is always available."

This, I'm going to answer briefly. It seems such a stupid way to attempt to influence you. It is true that snow and mud can be a problem. However, not as bad as one might think. Usually, the consumer has adequate storage and by reading the gauge on his tank, he can order gas early enough so that it can be delivered when conditions are favorable. Our customers have been very good about this. In the past 5½ years we have needed assistance only a very few times due to snow and mud.

How about the dependability of electricity? Does your supplier ever fail to deliver? How many times have you been without it in the past 5½ years? If you knew how many chicks have been lost with electric brooders, it would amaze you. Since I started writing this reply to the REA article, one farmer told me he lost \$700.00 worth of chicks from the failure of electricity. Well, I think enough has been said about this.

Did you ever find yourself in the dark? Just wanted to remind you we have some dandy bottle gas light fixtures that are nice to have on hand. At least, one in the kitchen.

It amuses us gas men very much when this writer attempts to frighten you from using automatically controlled gas ovens. What he is not telling you is that if the oven fails to light, the gas is automatically turned off by the 100% safety valve. Perhaps, he is just ignorant that there is such a thing. Any automatic gas equipment, whether it is an oven, refrigerator, water heater, furnace, or whatever it may be, always has a 100% safety valve that will shut the gas completely off in case the pilot is out. The appliance must have the 100% safety control on it to be approved by the Underwriters Laboratory and the American Gas Association. A good gas man will not install any automatic equipment without it.

Why do kitchen walls get dirty? We conclude our argument tomorrow. Don't miss it!

**Mervin Olson, Your Marvelgas Dealer,  
owner of Olson Appliance Company  
and the Watertown Bottle Gas Co.**

Save this copy . . . it may be worth dollars to you . . .

### CONCLUSION:

## ATTENTION REA AND BOTTLE GAS USERS — KNOW THE FACTS ABOUT BOTTLE GAS!

Did you know that the propane gas business has been the second largest expanding industry in the U. S. since the war? It is next to TV which has been the largest. If there was any truth in what the Watts News Writer would like to have you believe, this tremendous growth could not have happened.

"Gas ranges will be a little dirtier on top because of the gas flame." "Additional cleaning and scrubbing, and more decorating costs." There is no cleaner flame than a propane gas flame. It does not dirty a range. You can easily demonstrate this to yourself by boiling water in a glass coffee maker, or any container, for as long as you like, and you will find it spotlessly clean. If not, the burner needs a slight air adjustment. As for additional cleaning and more decorating costs, this is NOT the result of the range. Neither an electric or a bottle gas range dirty the walls. This is caused by cooking steam and grease and dust particles in the air. The extent depends largely on how either the electric or gas range is used, and how well a house is kept clean to minimize the dust in the air.

We are proud of our fine group of Marvelgas users, and we want to give you better and better service. We can only grow and gain this position by your loyalty. We are glad that this is a land of free enterprise and have no regrets that WE cannot borrow large sums of money at extremely low interest rates for long periods of time to establish such an enterprise.

You will notice that at the end of each article we have suggested that you keep your copies. Here's why, the first 10 people, interested in propane bulk storage for heating or as tractor fuel, who present us with a set of the four copies will receive a credit slip worth ONE HUNDRED DOLLARS on the purchase of a propane storage tank.

**Mervin Olson, Your Marvelgas Dealer,  
owner of Olson Appliance Company  
and the Watertown Bottle Gas Co.**

# The Private Part of Public Relations

Based on a Talk Given Before the 1954 Alabama LPGA Convention

By Carl Abell

WE CAN probably thank the movies and television for the popular misconception that the practice of "public relations" is the exclusive province of an individual or department in a large organization, and that the end result is to make things seem, in the eyes of the public, like what they are not.

This is not even an accurate description of most of the professional public relations practitioners, and it has nothing to do with the facts of life as related to you and to me. We small businessmen could not maintain a phoney picture of ourselves, even if we could create it temporarily. We are too close to the people. Our neighbors know too much about us. We all practice public relations, good or bad, every day. And there is no other phase of our business activities that is so important to our success.

## Good Relations Require Honesty

We could not escape that need for honesty in our public relations even if we wanted to, because in our restricted orbits public relations is the sum of all of our private relations with our employees, our customers, our organizations, our neighbors, our friends, and families. If our public relations program is good, it is because our human relations program is good.

There are many books and publications dealing with public relations, most of which are prepared by the

specialists serving big organizations. Much of this material relates to problems and techniques which are beyond the scope or need of the little businessman who must be his own specialist in almost every branch of his business.

The most useful guides for the handling of public relations problems as you and I know them are those that help us in our personal relations with



other humans. The fact that we sometimes encounter these humans in groups is purely incidental. The problem is individual, and the treatment is "man to man." This problem is as old as the human race, and the textbooks on the subject are numerous. The original text, which is the foundation of all that has followed, was written nearly 2000 years ago—the New Testament.

We all know the elements of this text, but few of us have reduced them to a workable formula. There is such a formula. Those who have devel-

oped and used it have found it to be highly rewarding, both in cash and in the elements that make up a richer and more satisfying life.

## Gentlemen, Mr. Dominowski

The best expression of this formula that I have ever seen was given to me by a man who was born on the other side of the Iron Curtain, and who came to this country so he could live a life in harmony with his ideas of human relations.

Jon Dominowski first came to my attention in March, 1953. I was visiting with the sales manager of one of the big LPG carburetor companies in Southern California, and we were interrupted by a long distance call. Jon identified himself as an L. P. gas dealer in a small town on the far eastern edge of the Corn Belt. Then he proceeded to order a long list of carburetion equipment. The sales manager wrote down the order, and made a quick estimate of the price.

"Why, man," he said, "what are you going to do with all those carburetors? That's almost \$12,000 worth of stock."

"I know that," Jon replied. "We have a new carburetor man and we think he is very competent. He believes that we can use all of these. You do not know me, and probably have never heard of our company, but we discount all our bills, and we'd like to have you make shipment as soon as possible. Today if you can. If you like, ship them COD. The



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money is ready for you, but ship them quick."

I wanted to meet the man who was willing to gamble \$12,000 on carburetors in that part of the United States, and I particularly wanted to meet an LPG distributor who had \$12,000. Following the Chicago convention a few weeks later I arranged with Joe Shingle, the territorial representative for that carburetor manufacturer, to take me for a visit with Jon Dominowski. Joe briefed me on the situation as we rode through the country.



Mr. Dominowski, who is now about 50, came to this country from Hungary at the age of 16. He and his brothers, who were penniless on their arrival, eventually got into the general merchandise business down where the Farm Belt runs into the strip coal mining area south of Chicago. After the business expanded to cover the numerous needs of the farm population, the brothers specialized, and eventually separated the enterprise into a wholesale meat and provision business, a retail general store, and a separate branch handling farm equipment, heavy hardware, and appliances.

### Business Continues Growing

Jon liked the appliance end of the business, and soon added cylinder gas as a service to his appliance customers. The greater opportunities offered by bulk distribution appealed to him, and he put in a distributing plant. The gas business pyramided until it overtook the other activities of the company, so it and the appliance department were set up as a corporation, with Jon as its head. Jon

had also become a man of importance in community affairs. Among other activities, he was leader of the men's Bible class at one of the local churches, with an average attendance of 150 men.

No stranger would ever pick Jon Dominowski out of a crowd as the man most likely to succeed. He was short, sandy haired, with an unimpressive figure and pale eyes peering through thick glasses. There was utterly no pretense or formality about the man. Yet it soon became evident that he had unusual ability to attract and get along with people. The lack of formality and tension in the organization indicated mutual understanding and confidence between Jon and his employees, which seemed in several cases to have developed into personal affection.

That Jon considered each employee important to the organization became clear in the way he introduced them. For example, "Paul is our carburetor man. He has had exceptional background as supervisor of propane equipment on one of the biggest construction fleets in the United States. He is doing a wonderful job for us. He has put on 31 tractor carburetors in 35 days."

Paul interrupted. "But I didn't sell most of those carburetors."

"You sold plenty," Jon replied, "and let's not forget that if you did not put them on right and satisfy the customers, we could not have gone on selling so many."

Later in the morning we looked over Jon's demonstration appliances in the showroom, which had just been redecorated and equipped with a new rubber tile floor. The interior decorator had done a good job, and everything in the room was harmonious and beautiful. Then the company employees had put the appliances in place. To protect the rubber flooring they had placed each appliance on the knocked out end of a packing crate.

These crate ends provided the only jarring note in the harmony of the showroom. I suggested that substitution of a small square of heavy plywood under each corner of the appli-

ance would improve the appearance. Jon called the janitor. Before discussing the project he introduced us, not just by name, but giving each a careful explanation of who the other was.

### Good Housekeeper

"Jim," he said, "is our housekeeper, and we couldn't keep house without him. He not only keeps the place clean, he also does all the other odd jobs around here that none of the rest of us have time to do."

"Jim," he continued, "Mr. Abell suggests that this place would look better if he did not have those ends of crates under the appliances. We still need to protect the floor. What would you think of using some pieces of heavy plywood maybe 4 or 5 in. square under each corner?"

"Mr. Jon," he replied, "those blocks would be all right if we just paint them dark so they don't show up so prominently on the green floor."

Half an hour later we passed through the service shop. There was Jim singing "Old Man River" as he applied black paint to a tall pile of plywood blocks, all cut neatly at the edges. There was no tool in sight that could make those clean cuts. Jon looked one over carefully.



"Those are awfully good, Jim. Where did you get them?"

"Over at Cook's cabinet shop. Mr. Cook didn't charge me anything. He cut them from some scrap lumber. He says there'll be lots more if you need them, and to tell Mr. Jon his little boy is just about ready to get out on that tricycle."

During the afternoon Jon took Joe and me to see some of his customers.

## The Private Part of Public Relations

Again the warm, friendly relationship was unmistakable.

In making the necessary introductions Jon never failed to give a fine build-up to each of the parties being introduced. We found Dean Lee in his barnyard, making repairs on a corn planter. After explaining who



the visitors were, Jon continued, "Dean is one of the best farmers in this part of the state. Almost every year he places among the top 10 in the Golden Acres corn contest. He also raises the best looking Black Angus cattle in the county. He has been very good to us by telling his neighbors how well his converted tractors run." Naturally, Dean showed us with pride everything on the place that operated on L. P. gas.

At the next farm the hired man told us that the owner had gone to town. The farmer's wife caught sight of us through the kitchen window, and came out bearing a fresh rhubarb pie, which she deposited carefully on the back seat of the car.

Jon explained, "Mrs. Jones makes the best rhubarb pie in the county. I'm not quite sure, but it might even be the best in the United States."

The same enthusiastic welcome continued all afternoon, and to each customer that we visited Jon assigned a place of importance in the community or the world. There seemed to be no one in his large acquaintance who was not important to him, and he never failed to make that fact apparent.

Late that afternoon, as we returned to town, I mentioned that I had heard of his Sunday morning men's class. Jon was all enthusiasm. "They're a great gang," he said, "but it takes a

lot of telephone work to keep them coming. The telephone committee is responsible for the good attendance."

"In my experience," I countered, "it does not work out that way. The telephone committee reminds them, but it is what they get out of the meetings that keeps them coming. They get something that helps them in their daily lives, and that is not accidental, any more than the loyalty of your employees and customers is accidental."

"All day long you have been unconsciously giving me the finest demonstration of practical human relations that I have ever seen. You make these right moves so instinctively and spontaneous, that I think they must come from your philosophy of life. I wish you would tell me in your own words about your philosophy of getting along with people."

### Golden Rule Applied

"It's never occurred to me that it's anything very special," he replied. "Anyone else on earth could do it. It's merely applying the Golden Rule in my dealings with people."

"Yes," I said, "the Golden Rule is probably the most quoted and the least understood passage in the Bible. It is stated as a generality. Each of



us must make his own interpretation. In order to be workable, we must pin it down to specific details, and build these details into the rules that govern our contacts with other people. Most of us never get far enough in the development of clear rules, and the result is fuzzy thinking, muddled living, and a terrific limitation on our ability to get along with people and

prosper from our associations with them.

"Your interpretation of the Golden Rule is no hazy generality. You have developed it into a set of clear rules that governs your actions. The results show up in your relations with your employees and your customers. Will you tell me how you interpret the Golden Rule, and how you put it to work?"

"It's the simplest thing in the world," he said, "when we analyze it on the basis of the other person's mental reaction. Most people only go so far as to think of the problem in terms of their own conscious desires. They try to create all other people in their own image. They forget that people are all individuals, differing widely in their conscious desires, interests, habits, reactions, and ideals. But underneath all this there are certain unconscious desires that are uniform and standard to all mankind."

"There are 20 makes of automobiles, all different. Because of the differences in people and pocket-books, they all find buyers. There are a thousand forms of recreation. You like to go fishing. Your wife prefers bridge or the movies. Others prefer books or television. Occupations, clothing, choice of a place to live, all emphasize the differences in conscious desires."

"We cannot build a good interpretation on conscious desires because of these differences. But when we get down to the universal unconscious desires, we are on sure ground because in these respects all people are alike, and they will react alike."

"Each of us realizes a deep-seated need for sympathetic understanding. I believe it is the most deeply rooted of all human characteristics. Every person on earth believes that he is right, and wants to feel that those around him also believe he is right. It is on this fundamental that our judicial system has been built; we must believe all men innocent until they are proved guilty. On it we form our conception of the dignity of the individual, which underlies our democratic government, our religious principles, our virtues of tolerance and charity. So our attitude to-

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ward all of the people we contact should begin with sympathetic understanding.

"The second item on our list of human needs is the desire for appreciation. It is a great emotional hunger. People not only want appreciation—sometimes desperately—but they are almost always eager in their response. Appreciation is only effective if it is put into words. The silent treatment does not go over. There is nothing else that costs so little and buys so much as words of appreciation. It is not possible for us to feel or express appreciation unless we first have sympathetic understanding for the other person.

## "I Want To Be Important"

"Then we come to the fact that every person on earth wants to feel that he is important. That desire can only be satisfied by periodic recognition of his importance. It may be done subtly and in private, as when we consult him on a problem. Or it can be done more openly, by giving him a build-up before other people. The desire for recognition is the reason why sales contests get results. People buy houses that are larger than they need, automobiles and fur coats that they cannot afford, to gain recognition. It is their way of assuring themselves that their importance is not overlooked. Recognition is like appreciation, but it is on a bigger and better scale. Generally it is appreciation made public. And once again, it originates in sympathetic understanding.

"On the satisfying of these three fundamental desires we can build our entire human relations program. For example, every business man wants loyalty from his employees and his customers. Most people want to give that loyalty; it is a part of human nature. But loyalty cannot be had for nothing, nor can it be bought with wages, working conditions, bargains, or easy payment terms. And it does not spring from a sense of duty. Loyalty must be earned by giving proper attention to the human desires for sympathetic understanding, appreciation and recognition.

"Up to this point the emphasis has been on the factors that relate strictly to our human relations in business. But there are more personal relationships that go to make up the richness of life, which rest on the same foundation. We all want friendship. There are many factors that go to make up friendship, but there are only four that it cannot do without: sympathetic understanding, appreciation, recognition, and loyalty. And these must be mutual. Some people might want to add mutual respect, and it is always present, but it is created naturally by the other four.

"We all want companionship. Companionship is a further development of friendship which comes from the frequent sharing of mutual likes, tastes, and enjoyments. It is friendship ripened and bearing fruit.



"Then we come to the highest of all human needs—personal love. Love must be mutual, and it cannot endure without companionship, so in the background we always find sympathetic understanding, appreciation, recognition, loyalty, and friendship, which have built up together to make companionship and love possible.

"The sequence is complete when we reach love. It makes a complete chain, but if any link is missing, the sequence ends there. It cannot be interrupted and then resumed at a later point.

"None of these thoughts are new. They are all a part of the common history of mankind. It has helped me in my own life to build each of these elements into its proper relationship in the formula. Through this explanation of life forces I have been able

to help others in their problems of human relations.

## Putting the Program to Work

"There is a simple and effective way to put the formula to work. Any one can do it, no matter how shy and retiring. Just start out by paying three sincere compliments each day; it does not matter who is on the receiving end. Compliments are appreciation; if done in public they are recognition. You cannot keep on this schedule for a month without realizing that people are wonderful. The reflected warmth of their response breaks through the chill that isolates the shy person from the rest of the world.

"I have seen the consistent practice of the compliment program change wallflowers of both sexes into charming and popular personalities in three months' time. And in business, well, it is a standard part of the training of all our people who meet the public, and if they need it for personal happiness, we include anyone else around the place.

"We can see the results every day: customers buying from us steadily almost as long as we have been in business, credit losses the lowest in the state, competition hitting a stone wall when it tries to take our customers. I think it has made our organization the finest team in the LPG business. Our people are happy in their work, and I believe they are happier than average in their private lives."

"Jon," I said, "there are millions of people who need your interpretation of the Golden Rule. May I write this up for publication?"

## The Man Was Modest

"Of course, but under one condition, that you do not bring my name into it. I do not want credit for something that has been growing for nearly 2000 years."

So Jon's name is not Dominowski, and he does not live in Illinois. But he lives, and his faith has enriched the lives of those who have known him. He asks no greater reward than this.

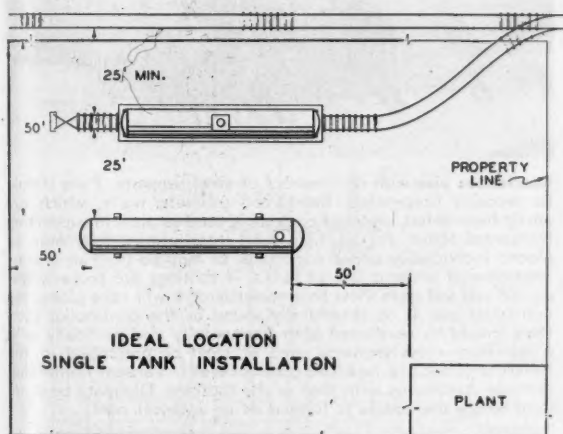


# Engineering Safety Into an LPG Plant

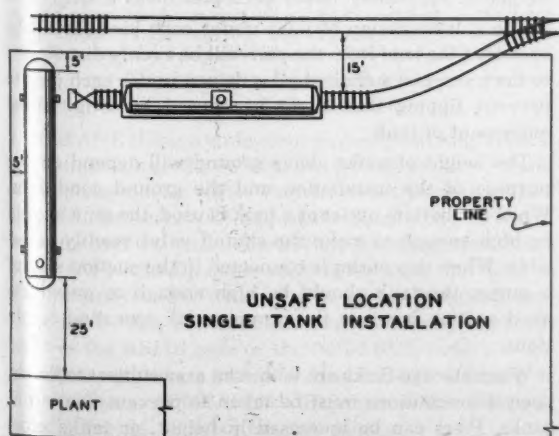
● By William H. Kramer Jr.  
Phillips Petroleum Co.  
New York, N. Y.

## 1. LOCATION OF STORAGE

### A safe single-tank installation



### An unsafe installation



THE first important step in designing a safety-engineered L. P. gas plant is the selection of a site. After this matter has been settled, we should give careful consideration to a maze of details including foundations and footings, selection and engineering of the tank itself, appurtenances such as excess flow valves, relief valves, shutoff valves, connections, piping and fittings, and grounding and painting.

The job starts with consideration of the location of a single 18,000- or 30,000-gal. tank. Safety, the No. 1 consideration, is normally achieved by selecting a level site 50 ft from any buildings and 50 ft from a property line that may be built upon. To achieve this primary objective of safety, other factors to be considered are:

1. Future plant and storage expansion so the above distances can always be maintained.
2. Storage area to be isolated from plant driveways.
3. Storage area to be isolated from other plant services.
4. Providing adequate space for a tank car unloading spot, since this spot should maintain the same 50-ft limitation with respect to buildings.



In making multiple tank installations additional spacing and distance requirements as outlined in NBFU Pamphlet 59 must be adhered to in addition to the 10 basic considerations listed for single tank installations. If recommended distances cannot be maintained, additional protection of some type may be required by the inspection department having jurisdiction.

5. Nearness to streams or rivers that may flood the area.

6. Storage to be located away from residential area, as far as conditions permit.

7. If other plants are around your fence line, the tank should be located in the least hazardous spot. Slope of ground at the storage area should be considered.

8. Economy.

9. Ease of operation.

10. Maintenance.

Unless all these factors are in proper balance and the plant site safe, it should be rejected.

The following standards and regulations should be referred to in designing and constructing L. P. gas installations at industrial and utility plants and at distributors' bulk plants: 1. National Fire Protection Association Pamphlet No. 58; 2. National Board of Fire Underwriters Pamphlet No. 59; 3. Association of American Railroads Circulars; 4. Local ordinance (fire marshal or similar authority); 5. State laws; 6. Insurance carrier.

## 2. FOUNDATIONS, FOOTINGS

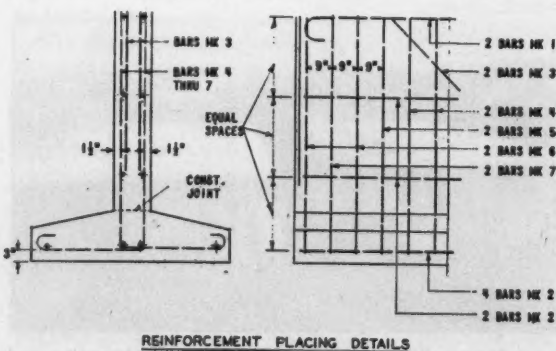
IN determining whether the soils of a site are suitable, it may be desirable to employ a competent consultant. It is generally unsafe to judge strength or soundness of foundation beds from surface appearances. A knowledge of local formations and possible presence of any substrata that would give trouble is necessary.

The bearing area of spread footings must be such that when the tank is loaded to a maximum condition the safe bearing capacity of the soil will not be exceeded. Such a condition will include the weight of the tank, liquid load (weight of water to fill tank), weight of pier, weight of footing and maximum overburden.

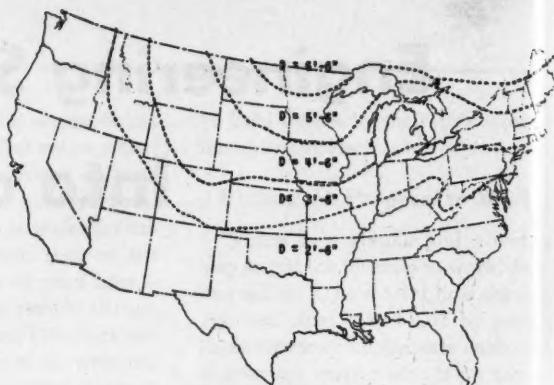
Where soil conditions are poor it may be necessary to use piling or other less conventional type footing.

If soil is not capable of carrying spread type footing, piling is necessary. Piling may also be advisable where excessive excavation is necessary to reach a suitable soil.

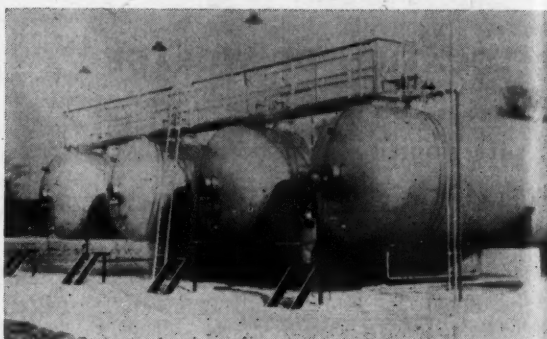
Either wood or concrete piling may be used, depending upon the conditions that exist at the site. Wood piling



A good example of a properly designed and reinforced footing for a 30,000-gal. capacity tank. Thickness of concrete spread footing will be determined by shear and flexural stresses in the usual manner as prescribed by the American Concrete Institute code for design of spread footings.



Depth map shows footing depths recommended to prevent damage from frost action.



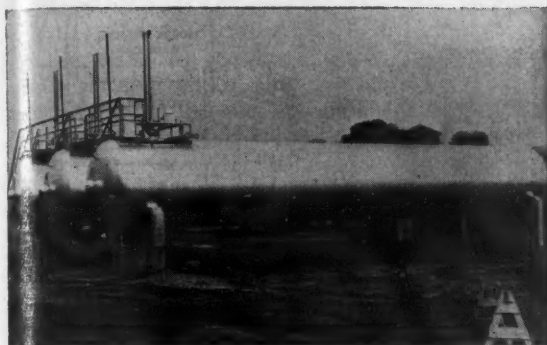
Continuous pier with no fireproof of steel supports. Piers should be properly fireproofed. Reinforced concrete walls, which are easily fireproofed, are most commonly used as piers in supporting horizontal tanks. For multiple tank installations, they may be placed individually under each tank or may be built as a continuous wall under a line of tanks. If footings are properly designed and soil tests show that no settlement will take place, the individual pier is as structurally sound as the continuous pier. Piers should be reinforced both horizontally and vertically with a minimum cross sectional area of steel as prescribed in the American Concrete Institute code for walls. Vertical reinforcing is made continuous with that in the footings. Diagonal bars are used where the saddle is formed as an integral part.

should be properly treated. Concrete pile caps are required on any type of piling, and like spread footings may be placed separately under each pier or as a strip.

The cluster design of piles under each pier should be such that the load from the pier will be evenly distributed to the piles, and sufficient piles driven under each pier to prevent tipping that might be caused by longitudinal movement of tank.

The height of tanks above ground will depend on the purpose of the installation and the ground conditions. When the bottom outlet of a tank is used, the tank should be high enough to make the shutoff valve readily accessible. When this outlet is connected to the suction side of a pump, the tank should be high enough to provide a good suction head on the pump under operating conditions.

When storage tanks are within an area subject to floods, special precautions must be taken to prevent floating of tanks. Piers can be increased in height, or tanks must

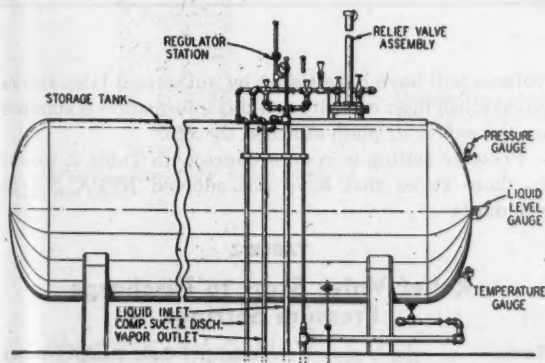


Experience has shown that fusion welded tanks can be supported safely by two piers placed anywhere between the two extremities of the tank and the quarter points.

be strapped to piers and the piers and footings made heavy enough to overcome the buoyancy of the tank when empty and also the buoyancy of the submerged concrete and the overburden.

It is general practice and recommended to have a resilient cushion under each pier to allow for minor imperfections in pier surface, to protect the tank from corrosion, and to act as a lubricant in tank expansion and contraction. In lieu of a resilient cushion, sometimes a corrosion plate consisting of thin steel is welded to the tank at the points resting on the piers.

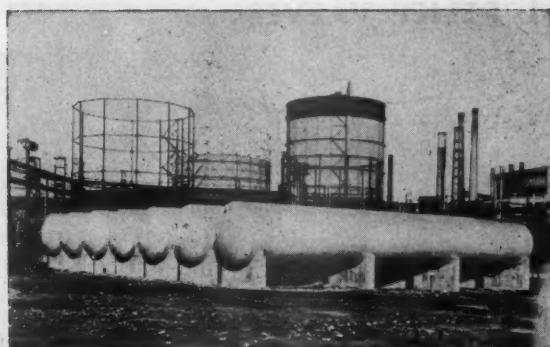
### 3. THE TANK



Standard 30,000-gal. propane tank with standard 18-in. man-way opening, 2-in. bottom connection, and a pressure gauge, volume gauge, and temperature gauge connection on the front head. Design of openings has been more or less standard over the years, and there is no evidence to show a need for change.

**P**ROpane storage tanks shall be designed, constructed, and tested in accordance with the unfired pressure vessel code sponsored by either the American Society of Mechanical Engineers (ASME) or the American Petroleum Institute and the American Society of Mechanical Engineers (API-ASME) or in accordance with the rules of the authority under which the tanks are installed, provided such rules are in substantial conformity with the rules of the ASME code or the API-ASME code.

Propane tanks are stamped ASME U-68 - 200 psig or U-69 - 200 psig; ASME U-200 - 250 psig or U-201 - 250 psig; or ASME code, 1950 edition, 250 psig.



More than two supporting piers are not recommended because of the difficulty in aligning more than two. Unequal loading also results, with consequent undesirable stresses in the tank.

New tanks should, if possible, be constructed in accordance with the ASME code 1950 edition or Paragraphs U-200 or U-201 of the 1949 edition of the ASME code. Table 1 shows the design pressure for various codes.

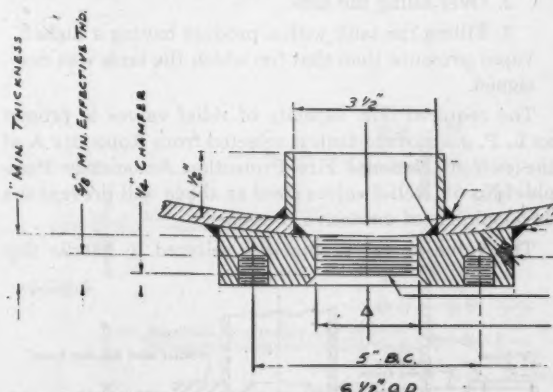
TABLE 1

#### Minimum Design Pressures to Be Used With the Different Codes

Tank Type	Vapor Pressure at 100 F Not to Exceed psig	ASME U-68, U-69 1949 Edit. psig	ASME U-200, U-201 ASME 1950 Edit. API-ASME - psig
200	215	200	250

The ASME code, 1950 edition, has been adopted by most states excepting Pennsylvania and Ohio. Pennsylvania still requires ASME U-68 or U-69 200 psig design pressure. Tank relief valves in Pennsylvania must be set at 100% of tank design pressure with a tolerance of 10% in setting.

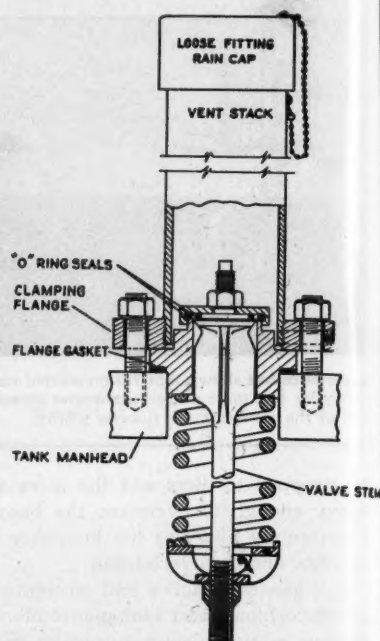
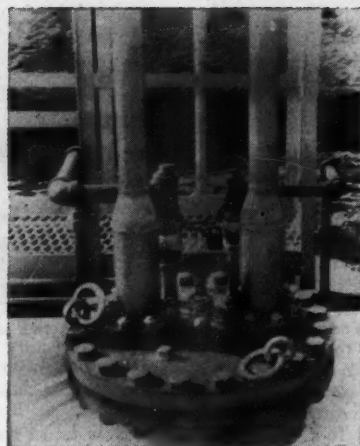
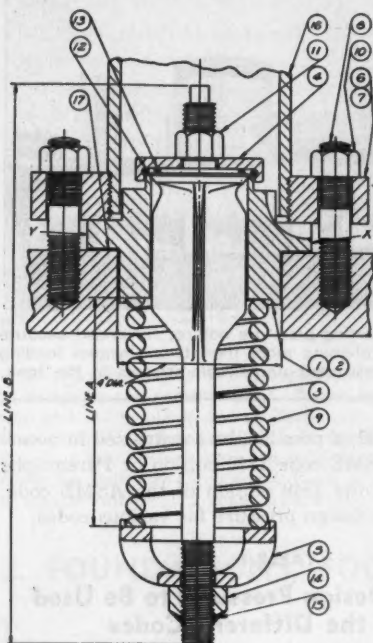
Pamphlets NFPA 58 and NBFU 59 limit the tank size to 30,000 standard U. S. gallons capacity.



The bottom outlet has been standard for years. Although today various persons are requesting that these be eliminated, there would seem to be no reason why this should make a safer installation. It is as safe as a top outlet if good engineering practices are followed in designing piping known to be subject to expansion, contraction, pulsations, and tank settlement. The 1 1/2-in.-high collar inside the tank prevents any moisture from collecting in the line and eliminates scale and foreign matter as well. The primary necessity for this opening is to provide direct piping to a liquid pump for static head and to eliminate gassing or cavitation. Liquid pumps are required for cylinder filling and for utility installations where large volumes of liquid are withdrawn for vaporization. Some utilities require this as a suction connection for liquid pumps used for maintaining pressure in a vaporizer.



## 4. RELIEF VALVES



**Left:** Type of relief valve approved by Underwriters' Laboratories. **Above:** Stacks such as these should be changed, because if relief risers are not the same size as the relief valve outlet connection, flow is reduced considerably. **Right:** A properly designed stack with loose fitting rain cap. Present regulations permit a 7-ft riser. Calculations show that there is not enough difference in the effect of radiant heat on the top of a tank caused by gas burning at the end of a 10- or 15-ft riser to make it wise to add the extra length. The additional danger of the added leverage of the longer pipe on the flange is enough in itself to rule out the extension.

**R**ELIEF valves are installed on L. P. gas storage tanks to protect the tank against over-pressure caused by:

1. An external fire.
2. Over-filling the tank.
3. Filling the tank with a product having a higher vapor pressure than that for which the tank was designed.

The required flow capacity of relief valves to protect an L. P. gas storage tank is selected from Appendix A of the current National Fire Protection Association Pamphlet No. 58. Relief valves sized as above will prevent the development of excessive pressure.

The valve or valves that are selected to handle this

volume will have been tested by authorized laboratories to establish their capacity and this information is stamped on the valves or plate attached thereto.

Pressure setting is in accordance with Table 2, except in those states that have not adopted NFPA No. 58 standards.

**TABLE 2**  
**Relief Valve Start to Discharge Pressure Settings**

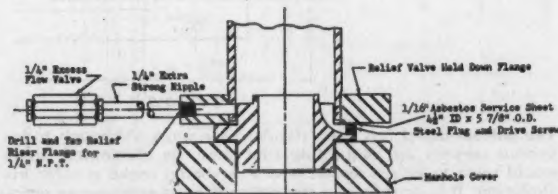
Tanks	Percent of Code Design Pressure	
	Min.	Max.
ASME U-68 - U-69	110	125
ASME U-200 - U-201	90	100
ASME 1950 Edition	90	100
API-ASME	90	100

Certain internal type relief valves installed prior to Jan. 1, 1945, should be replaced immediately, since most of these valves had bronze stems and like all castings, are subject to failure from shock.

Certain internal type relief valves installed between January, 1945, and December, 1949, should be checked to make certain they have steel stems. If replacement is necessary, only Underwriters' Laboratories approved valves should be used.

The external type relief valve is sometimes used but not generally recommended. If this type is used the manifold used should be steel. Any cast iron manifolds in use should be changed.

Most internal type relief valves have a milled slot in



**Modifications to relief valves having a milled slot in the flange for water drain, made to prevent passing of large quantities of gas. The existing drain slot is plugged and a hole is drilled and tapped through the hold-down flange so that a 1/4-in. nipple and a small excess flow valve can be installed. This may be done temporarily without removing the relief valve riser and hold-down flange. When the tank can be emptied and freed of pressure, a gasket can be placed under the hold-down flange to seal the top surface of the relief valve flange. The drain slot plug can be securely fastened in place at the same time.**

the flange to drain off water from the valve and prevent freezing.

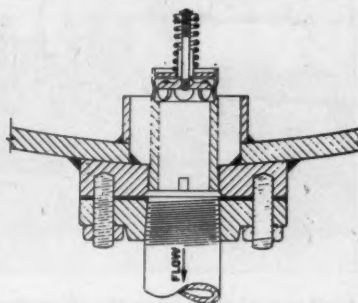
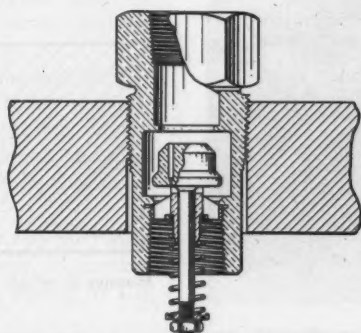
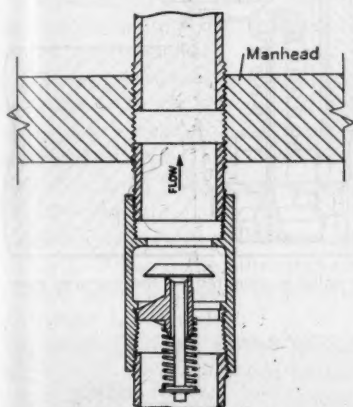
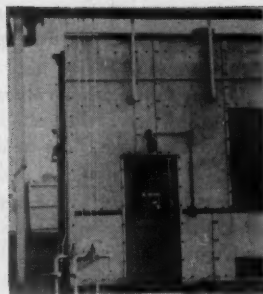
Recent tests have shown that this slot passes a large quantity of gas when the relief valve blows, and if ignited may impinge on the tank or adjacent tanks.

A recommended method\* of handling the drain hole problem for present relief valves is shown on page 44.

New relief valves are provided with drilled and tapped holes for the installation of nipples and excess flow valves. Therefore, the work described in the caption is not needed in the case of new valves.

Other methods for preventing impingement of flame on the tanks are: 1. by means of drain hole deflectors; 2. by plugging the drain slot and putting anti-freeze liquid in the stack; and 3. piping the discharge to a safe location.

\*This method has been developed by Phillips Petroleum Co. and complete instructions are available. Address Sales Department, Equipment Division, Bartlesville, Oklahoma.



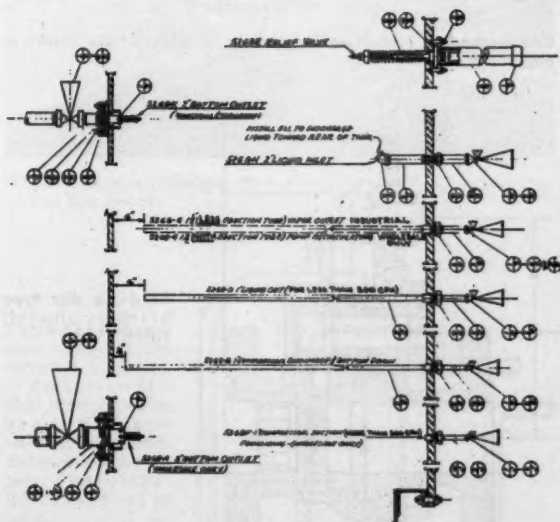
## 5. EXCESS FLOW VALVES

**ALL** storage tank connections except relief valves and volume gauge shall be protected by an excess flow valve or back flow check valve. These valves should be approved by Underwriters Laboratories.

An excess valve is intended to serve only one very important purpose: to prevent hazards resulting from inadvertent escape of L. P. gas by automatically shutting off the flow of liquid or gas to the atmosphere when line breakage or another mishap occurs.

These valves shall be located either inside the tank or at a point outside where the line enters the tank; in the latter case, installation shall be made in such a manner that any undue strain beyond the excess flow valve will not cause breakage between the tank and excess flow valve.

To be most effective excess flow valves should be sized to close at the lowest practical flow, yet must have

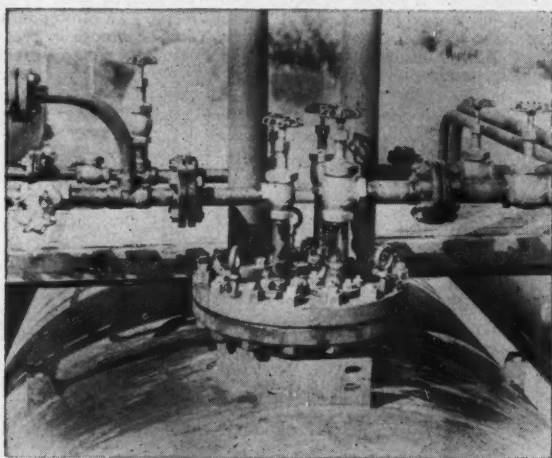


enough capacity so that they will not close with unavoidable line surges, or during normal operating conditions.

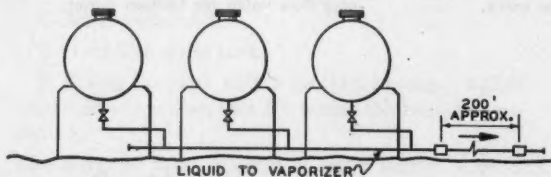
It is important to note that the tank connections or line, including other valves or fittings being protected by an excess flow valve, shall have a greater capacity than the rated closing flow of the excess flow valve.

All branch lines, particularly long liquid lines, should be protected by excess flow valves or some type of automatic shutoff valve that can be remotely controlled. The selection of these automatic protection devices will depend upon local individual conditions.

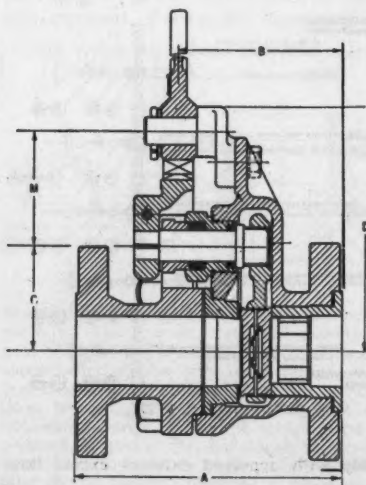
Like all automatic devices, excess flow valves require periodic testing. After the initial test at the time of installation, it is good maintenance to test these devices at least once a year.



Another method of assembly at manway using flanged connections.

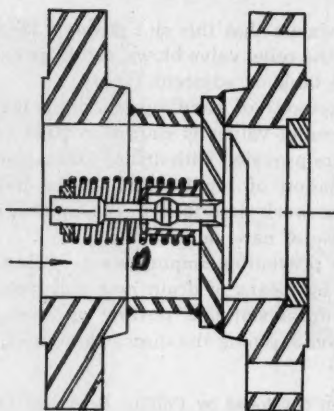


One method of protecting liquid lines by excess flow valves or automatic shutoff valve.

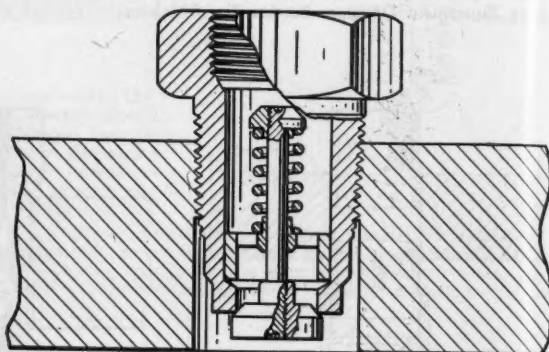


Sliding disc type primary shutoff valve.

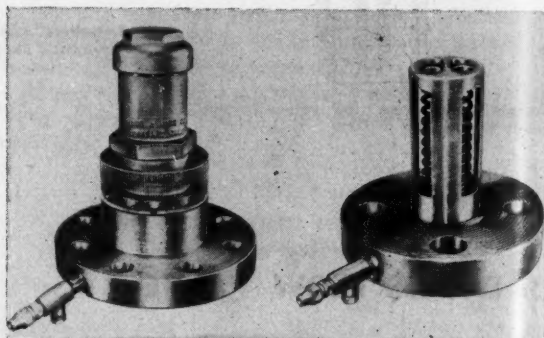
## LINE VALVE



Drawing shows an automatic type pipe line shutoff valve.



Manner in which filler valve is mounted on the manway cover.



An automotive closing internal type valve is opened only by hydraulic pressure imposed on the system by manual or automatic operating mechanism. The hydraulic system is provided with fuse plugs and with pressure release valves remote from the operating mechanism and serving as secondary control for closing valves in an emergency. This valve is used inside storage tanks in the same manner as excess flow valves.

## 6. CONNECTIONS, GAUGES, SHUTOFF VALVES

WHEN screwed connections are used at the manway cover, bottom outlet, and pressure gauge, all nipples directly connected to the tank must be of extra strong (Schedule 80) seamless steel pipe.



Pipe, nipples or swage nipples shall not be made from free machining bar stock.

The liquid fill connection on tanks should be provided with a back pressure check valve which permits flow in one direction only—into the tank. This provides added protection for the liquid fill line in case of a break between the tank and unloading rack.

All tanks shall be equipped with either a magnetic gauge, rotary gauge or slip tube gauge of the approved type to indicate the liquid level. Tanks equipped with magnetic gauges shall have some other means to determine the maximum liquid filling height. This can be a slip tube gauge or a test connection located at the maximum filling height of the tank.

All shutoff valves on or at the storage tank should be approved by Underwriters' Laboratories Inc. The gas and oil equipment list of Underwriters' Laboratories, November, 1951, gives a listing of resilient seat type, metal-to-metal seat type, lubricated plug type, or diaphragm type and specifies whether they are suitable for primary or positive shutoff.

Metal-to-metal seat gate valves are suitable only for installation in branch or by-pass lines where positive shutoff is not essential.

The most commonly accepted type of primary shutoff valve for L. P. gas service is a bronze angle or globe valve with a resilient seat impervious to the solvent action of L. P. gas. This valve is UL approved, and similar valves have given years of trouble free service in the LPG industry.

Another type valve used frequently by the gas industry for L. P. gas is the lubricated plug type. A number of these valves are approved for primary shutoff by Underwriters' Laboratories.

A word of caution on this type valve: the lubricant or grease in this valve must be suitable for L. P. gas, otherwise the seal will be dissolved and the valve will leak. Before installing a lubricated plug valve make certain, by test if necessary, that the correct grease is in the valve. When in operation, this valve must be lubricated periodically with the correct grease.

## 7. PIPING, FITTINGS

**P**IPING in an L. P. gas plant is one of the most important details. Piping can mean the difference between a safe plant and a hazardous one. The use of the proper type and specification pipe is the first requirement of a safe piping job.

All piping shall be standard weight (Schedule 40) except nipples in manway cover and other connections directly connected at the tank, which shall be extra strong (Schedule 80).

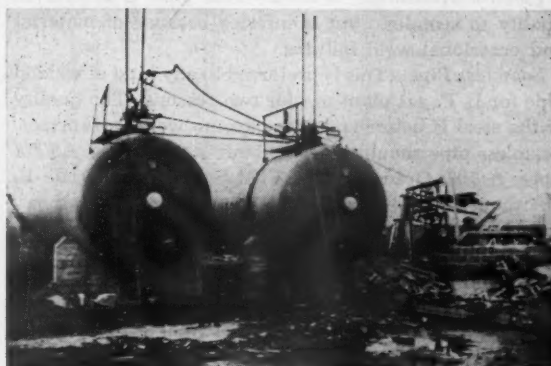
Types of carbon steel pipe include:

**Butt Welded**—This type is rated lowest in allowable stress because of the inherent weakness at the weld and because of the brittle Bessemer steel commonly used.

**Lap Welded**—The primary weakness of this pipe is due to the quality of the steel, lack of control during welding and the nature of the welds.

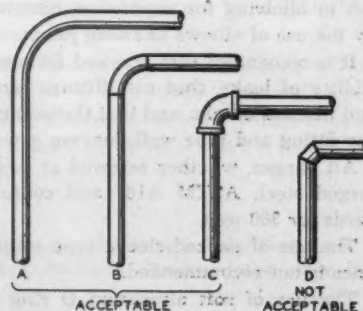


Above and below: Flexibility in piping prevented line breaks in these two cases.



When tank was dislodged by a flood, flexibility in piping prevented line breaks.

Types of connections used to accomplish a change in direction of a pipe line: A—pipe bend; B—elbow welded; C—screwed; D—mitre-welded elbow. The mitre-joint should not be used.





Rigid piping with no flexibility.

**Electric Resistance Welded**—This pipe is second in quality to seamless, but is inferior because of material and occasional weld failures.

**Seamless Pipe**—This is preferred to any kind of welded pipe for L. P. gas plant use for two reasons. The quality of the steel is better and there are no weld weaknesses. Seamless pipe should be a weldable steel such as ASTM Spec. A 106, Grade B, or ASTM Spec. A 53, Grade B.

Although LPG is handled at atmospheric temperatures, consideration must be given to increased temperature due to steam heat exchangers, compressors and like equipment, and also the lowered temperatures due to expansion of the gas.

Extremely low temperatures and high stresses occur when liquid lines are blown down to make repairs or alterations in plant piping. Throttling across a valve can give the same effect. High temperatures and stresses may also occur when purging lines with steam.

If screwed fittings are to be used in L. P. gas piping the proper selection of the type and specification of the fittings is just as important as the pipe used.

Forged steel fittings are preferable to 300-lb malleable iron fittings because of the inherent weakness of cast metals. The 300-lb American Standard malleable iron fitting is the minimum acceptable. This fitting is sometimes called extra heavy malleable.

Numerous cases can be cited where extra heavy malleable iron fittings were ordered and 250-lb extra heavy cast iron fittings were furnished. The numerals 300 and the letters M. I. stamped on these malleable iron fittings correctly identify them. Cast iron fittings must not be used.

Screwed piping has been general practice in the ordinary sized LPG plant because of availability of materials and the non-technical skill required to do an acceptable job in allowing for expansion, contraction and settling by the use of elbows as swing joints.

It is recognized that screwed fittings increase the possibility of leaks, that cast fittings can have sand holes and thermal cracks, and that threading removes much of the fitting and pipe wall, leaving a weakened joint.

All flanges, whether screwed or welded, should be of forged steel, ASTM A181 and conform to ASA standards for 300 psig.

The use of packed sleeve type couplings in L. P. gas lines is not recommended.

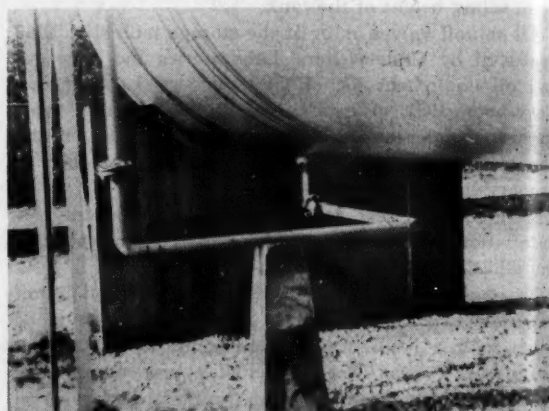
The use of soft aluminum O ring gaskets has been

standard practice in the L. P. gas industry for a good many years.

Recent tests have been conducted by Factory Mutual Laboratories on four types of gaskets: 1. synthetic rubber; 2. compressed asbestos; 3. spiral wound steel-asbestos; and 4. aluminum, to determine their ability to withstand exposure fires.

From the test results, aluminum O ring, and spiral wound metal-asbestos are recommended.

Pipe threads are inherently somewhat imperfect, and



Piping supported on separate piers. Unless sufficient flexibility is in piping, differential settlement may cause line breakage.

to insure tightness as well as to facilitate assembly, some form of compound is used. Theoretically, if the threads of the pipe and fittings were cut perfectly, only a lubricant would be necessary when the joint is made up. However, because of the practical limitations on threading, a joint compound impervious to the solvent action of L. P. gas should be used.

Welded piping has almost universal acceptance in the gas industry because it is permanently leak proof, requires little or no maintenance for the life of the system, and through the use of welded fittings forms a continuous metal structure with the pipe and produces joints as strong or stronger than the pipe itself.

Forged steel welded fittings such as those supplied to ASTM specifications A-181 and A-234 are recommended.

A welded piping job requires not only qualified welders but experienced designers, supervisors and inspectors to insure quality work.

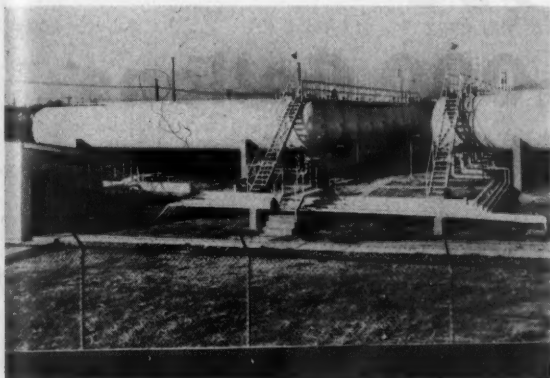
The ASA code for pressure piping (B31.1) states that "The contractor shall be responsible for the quality of the welding done by his organization, and shall conduct tests not only of the welding procedure . . . but also of the welding operators. It is assumed that the contractor performing the welding has an organization familiar with this code and capable of designing, engineering and supervising welded piping constructions."

Piping in an L. P. gas plant must be designed to allow for contraction, expansion, settling, and surging in the piping as well as in the storage tanks. This problem is magnified as the size of the storage area increases.

There are three general methods of installing lines: underground, overhead, or on sleepers. Where placed underground, no supports are necessary, plant yard is not cluttered and danger of damage by external forces has been reduced.

The disadvantages are that all underground lines must be coated, certain soil conditions require special pipe protection, lines must be encased under roads and rail spurs, pipes can corrode if coating is improperly applied. Corrosion cannot be observed until a leak occurs.

Overhead lines have the advantage of being easily observed and maintained. They can be swung to allow for expansion and contraction.



Good piping with adequate swings.

Overhead supports are expensive and are often in the way of moving equipment about the plant.

The third method is to place lines on low supports or sleepers. These lines can easily be maintained and installation cost is low. The possibility of damage from external forces is greater and the lines may restrict movement about the plant.

There is no hard and fast rule to follow in deciding which of the three methods to use. Each situation must be decided upon after consideration of all conditions involved and in the light of sound engineering practices.

Safety is of prime importance in any piping design. Keeping piping stresses within safe limits is the most important consideration, not only under the conditions at the time of plant construction, but also during any conditions that are likely to arise later due to settlement, temperature changes, vibration or a combination of these.

Settlement of tanks, equipment, pipe supports or fill (in the case of buried lines) can cause failure. Because the magnitude of settlement is difficult to determine, the safest rule is to make the pipe very flexible and to watch for settlement once the plant is in operation.

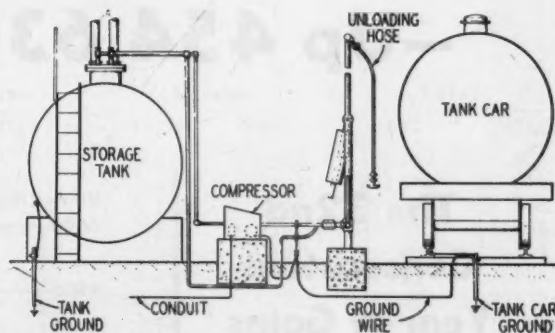
Although it is the practice of the L. P. gas industry to coat and wrap all underground lines, it is sometimes necessary to consider cathodic protection of these lines against galvanic or electrolytic corrosion, which may be caused by many underground and aboveground conditions. It is recommended that you become familiar with these.

## 8. GROUNDING, PAINTING

ALL storage tanks should be adequately grounded against lightning. All electrical equipment should be grounded. Tank car unloading equipment and the siding should be adequately grounded against static electricity.

The use of buried pipes or existing grounding systems as a ground for any part of an L. P. gas plant is not recommended.

Although the use of a single driven 8-ft ground rod attached to each tank is usually adequate, certain soils have high electrical resistance and all grounds should be



Standard method of grounding an L. P. gas system and siding.

measured. Where a single ground rod is driven and the ground resistance checked with a ground meggar or other suitable means and found too high, one of the following remedies may be adopted:

1. The use of multiple ground rods.
2. Soil treatment either above or below ground level.
3. The use of deep grounds.

Whichever method is adopted, periodic checking of ground systems is advisable.

As a safeguard against lightning hazard, a ground resistance of 5 ohms should be considered as the maximum limit for L. P. gas installation. This will also effectively remove all static charges from the system.

LPG storage tanks should be painted with a fume-proof, slow chalking, white paint, rather than aluminum paint, in order to reduce the pressure build-up in tanks during the hot summer months.

Recent tests show that white paint is the best reflector of sunlight and holds its reflectivity very well over a long period of time, whereas aluminum paints does not. When aluminum paint loses its initial lustre, its reflectivity decreases greatly.

Adapted from a paper presented before the Production and Chemical Conference, American Gas Association, New York, N. Y.



# LPG Sales in 1953

## —Up 454,630,000 Gallons

### The 32nd Consecutive Year of Gains

The first Bureau of Mines report in 1922 listed total sales of 223,000 gallons. Every subsequent report has recorded increased volume.

Millions of Gallons



THE marketed production of LPG in 1953 again topped all previous records, according to the annual U. S. Bureau of Mines report. Total sales, including exports, passed the 5 billion gal. mark for the first time. U. S. sales were up 454,630,000 gal. to a total of 4,932,009,000; a 10.2% gain over 1952.

Domestic and commercial sales accounted for 50.3% of the total, reaching a new high of 2,479,000,000 gal.; up 9.4% over 1952. Internal combustion engine uses continued as the fastest growing major market for LPG with a 34.5% jump in sales to 498,238,000 gal. Next to the domestic and commercial market, engine fuel usage registered the greatest gallonage

#### RELATIVE PERCENTAGE OF PRINCIPAL USES

	Domestic	Chem. and Syn. Rubber	Int. Comb.	Industrial	Gas Mfg.	All Other
1947 .....	52.1	27.8	4.5	7.9	7.7	—
1948 .....	53.8	27.4	3.4	6.6	8.7	.1
1949 .....	57.4	25.5	2.7	5.7	8.4	.3
1950 .....	58.1	24.5	3.7	6.2	7.2	.3
1951 .....	51.2	28.9	6.8	6.2	6.7	.2
1952 .....	50.6	27.7	8.3	7.3	5.8	.3
1953 .....	50.3	27.5	10.1	7.1	4.5	.5

#### 7 YEAR TREND IN SALES OF BUTANE, PROPANE, AND MIXTURES

All figures listed in thousands of gallons.

	Butane	Propane	Butane-Propane Mixture	Total LPG	% Increase
1947 .....	398,635	863,686	947,476	2,209,797	29.7
1948 .....	512,615	1,279,744	944,412	2,736,801	23.8
1949 .....	488,801	1,403,359	944,439	2,836,599	3.6
1950 .....	568,038	1,938,301	976,228	3,482,567	22.8
1951 .....	708,989	2,418,790	1,099,496	4,227,275	21.4
1952 .....	639,282	2,513,595	1,324,502	4,477,379	5.9
1953 .....	671,320	2,832,495	1,428,194	4,932,009	10.2

# ANALYSIS OF MARKETED LPG FOR 1952 AND 1953 BY CENSUS AREAS

Area	Domestic & Comm.		Internal Combustion		Industrial	
	1952	1953	1952	1953	1952	1953
New England.....	74,212	82,824	752	848	19,353	25,346
Middle Atlantic.....	114,716	123,568	259	369	50,477	50,200
South Atlantic.....	265,960	294,323	4,177	5,536	25,647	27,381
E. No. Central.....	259,229	286,122	32,321	38,471	91,812	97,717
W. No. Central.....	401,347	445,981	37,097	49,348	29,078	34,002
E. So. Central.....	169,708	187,863	11,603	16,543	8,947	11,660
W. So. Central.....	618,614	674,583	187,885	268,086	71,606	80,977
Mountain.....	153,068	165,443	36,617	52,605	8,399	10,580
Pacific.....	209,324	218,473	59,847	66,432	19,648	10,654
<b>TOTAL.....</b>	<b>2,266,178</b>	<b>2,479,180</b>	<b>370,558</b>	<b>498,238</b>	<b>324,967</b>	<b>348,517</b>

Area	Gas Manufacturing		Chemical & Rubber		All Other		TOTAL	
	1952	1953	1952	1953	1952	1953	1952	1953
New England.....	33,776	24,841	137	93	2,030	4,023	130,260	137,975
Middle Atlantic.....	31,870	22,751	14,761	14,903	419	483	212,502	212,274
South Atlantic.....	51,485	49,622	149,653	146,148	603	4,006	497,525	527,016
E. No. Central.....	49,862	43,452	44,967	50,552	1,356	1,511	479,547	577,825
W. No. Central.....	33,247	30,175	56	10	1,144	1,523	501,969	561,039
E. So. Central.....	7,277	7,586	56,574	57,217	1,448	1,639	255,557	282,508
W. So. Central.....	8,367	10,162	892,997	1,004,547	3,061	8,223	1,782,530	2,046,578
Mountain.....	15,133	14,551	74	—	1,187	1,912	214,478	245,091
Pacific.....	28,680	19,290	82,768	84,458	2,744	2,396	403,011	401,703
<b>TOTAL.....</b>	<b>259,697</b>	<b>222,430</b>	<b>1,241,987</b>	<b>1,357,928</b>	<b>13,992</b>	<b>25,716</b>	<b>4,477,379</b>	<b>4,932,009</b>
Exports.....							99,296	124,749
<b>GRAND TOTAL.....</b>							<b>4,576,675</b>	<b>5,056,758</b>

All figures in thousands of gallons.

gain; more than synthetic rubber, chemical, and industrial gains combined. Gas manufacturing was the only division to show a net loss, down 14.3% from 1952. Losses in this category, due to the extension of natural gas service and to mild winters, have been more than made up by increases in industrial sales; pointing up the developing market for industrial standby plants in both city and suburban areas.

## Propane Sales

Propane's share of LPG sales continues to rise, accounting for 57.4% of total sales in 1953. Despite gallonage gains in both butane and butane-propane mixtures, their ratio to total sales dropped to 13.6% for the former and 29.0% for the latter. This is a continuation of the rather erratic trend for these fuels over the past several years . . . figures for 1949 showing propane with a 49.5% share,

butane 17.2%, and butane-propane mixtures 33.3%.

The 1953 figures represent a clarification in reporting techniques by the Bureau of Mines. Over 90% of the dealers and distributors selling over 100,000 gal. per year are now supplying sales breakdowns. The substantial increases over previous years

in internal combustion engine and "other" uses (which include such agricultural applications as stock tank heating, brooding, flame weeding, grain and hay drying and tobacco curing) are partly the result of the more accurate reporting from retail outlets.

Exports of LPG passed the 100 mil-

## LPG EXPORTS BY COUNTRIES • All figures in thousands of gallons.

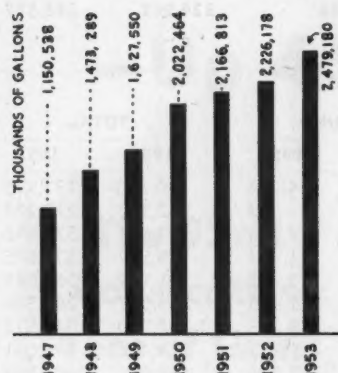
	1947	1948	1949	1950	1951	1952	1953*
Argentina .....	8	290	546	54	—	—	—
Bermuda .....	198	269	282	322	405	417	536
Brazil .....	1,570	1,720	3,405	4,686	6,413	11,046	12,469
Canada .....	31,591	26,681	31,195	34,032	43,293	42,951	56,155
Cuba .....	59	259	463	1,264	2,228	3,408	4,718
France .....	2,082	—	—	639	1,265	—	—
Mexico .....	16,471	15,497	16,120	25,415	31,976	40,003	49,567
Philippines .....	402	568	894	751	783	528	243
Other countries .....	852	236	478	600	881	943	1,061
<b>Total .....</b>	<b>53,233</b>	<b>45,520</b>	<b>53,383</b>	<b>67,763</b>	<b>87,244</b>	<b>99,296</b>	<b>124,749</b>

\*Preliminary.



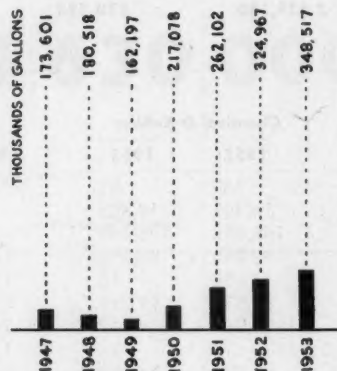
## DOMESTIC and COMMERCIAL

Domestic and Commercial LPG sales, 50.3% of total sales, were up 213,002,000 gallons. This was a 9.5% gain over 1952, doubling the 1952 gains.



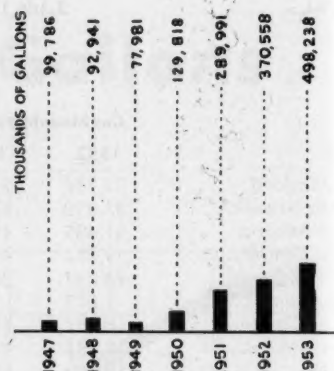
## INDUSTRIAL

Sales of LPG for Industrial uses increased 7.2% over 1952, a gain of 23,550,000 gallons. Industrial sales have more than doubled since 1949.



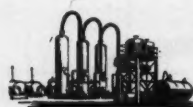
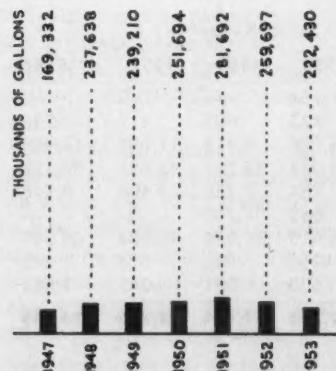
## INTERNAL COMBUSTION

LPG fuel for internal combustion engines continued as the fastest growing division; up 127,680,000 gallons, or 34.5% over 1952.



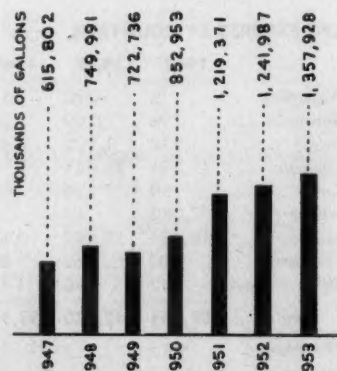
## GAS MANUFACTURING

Reflecting a combination of mild weather and expansion of natural gas lines, gas manufacturing uses for LPG dropped 37,267,000 gallons, or 14.4%.



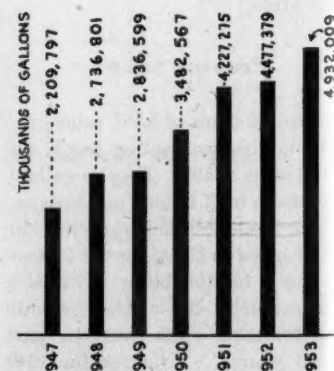
## CHEMICAL and SYNTHETIC RUBBER

Combined chemical and synthetic rubber sales continued to rise, up 115,941,000 gallons or 9.3% over 1952. Nearly 90% of the synthetic rubber demand is for straight butane.



## TOTAL — ALL USES

Total sales of LPG in 1953 increased 454,630,000 gallons or 10.2% over 1952. The gallonage gain alone was greater than the entire marketed production in 1944.



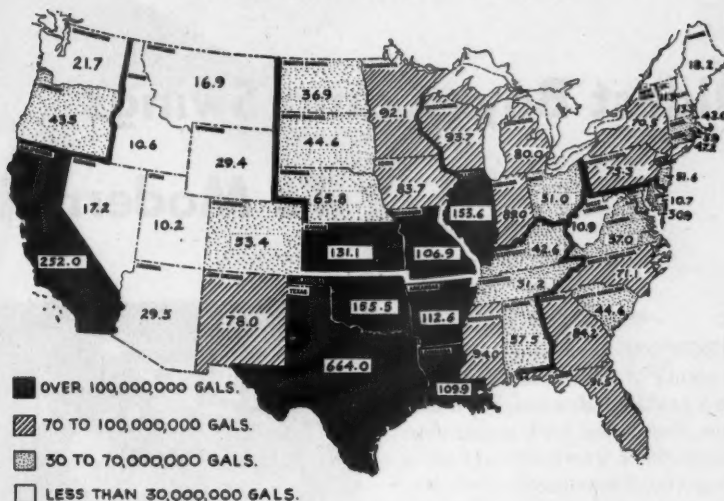


## TOTAL LPG SALES FOR 1953

(Excluding chemical and synthetic rubber)

### Maps Show Dealer Markets

State by state LPG sales for 1953 by major divisions are shown in the maps at the right. They emphasize the nationwide expansion in dealer markets during the past year.



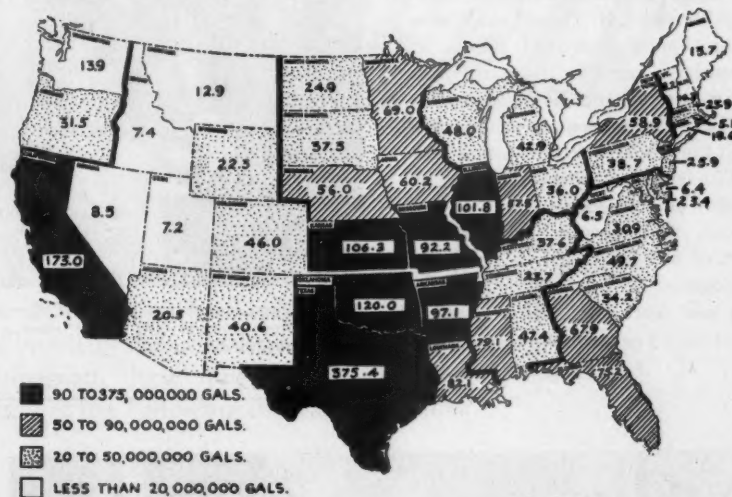
lion gal. mark for the first time, accounted for by substantial increases in Canadian and Mexican shipments. It is expected that with the development of local refining facilities, the Canadian market will be able to produce a greater share of its LPG requirements while continuing to expand as a market for U. S. equipment and appliances.

### Ahead of 1952 Levels

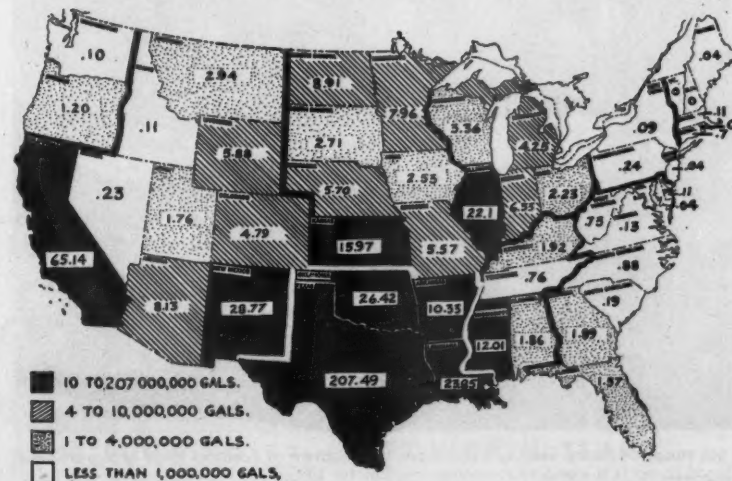
By census areas, all regions were ahead of 1952 levels in domestic and commercial and internal combustion uses. In the Pacific states the growth in natural gas distribution dropped LPG sales for gas manufacturing and industrial uses. For gas manufacturing, all regions except the East and West South Central states showed losses. Previous studies of the effect of natural gas expansion on over-all LPG sales have, however, shown this to result in a shift in markets rather than a loss of markets for LPG operators. The publicity and promotion attending a conversion of utilities to natural gas always builds LPG markets beyond the mains for dealers to cash in on, and results in gains for both the utility and the LPG business.

It is interesting to note that in the January 1953 issue of BUTANE-PROPANE News, six months before official figures were released, George R. Benz and Paul W. Tucker of Phillips Petroleum Co. forecast total LPG sales, exports, domestic and commercial, and internal combustion usage with less than a 1% variance from official totals.

## TOTAL DOMESTIC AND COMMERCIAL SALES FOR 1953



## TOTAL INTERNAL COMBUSTION SALES FOR 1953



# Oldest Boys Camp Swings To Modern Rural Fuel

**G**ROWING boys like good food and plenty of it. The fact that they do is a healthy indication, but it also means that a big food preparation problem exists wherever you have a large group of boys together—for example, at a boys' camp.

L. P. gas has helped solve the food problems for Camp Dudley, located near Westport, N. Y., on Lake Champlain. Founded in 1885, this is the oldest boys' camp in the country and is owned by the New York state YMCA. The present location has been the site of the camp since 1910.

With campers, counselors and staff, Dudley accommodates well over 400 people. Ten persons are housed in each of 35 cabins, and larger buildings contain the huge dining hall, theater and recreation hall, craft shop, boat house, infirmary, and office.



With campers, counselors and staff, Camp Dudley, located near Westport, N. Y., accommodates well over 400 people. Here a group of boys file into the large dining room for Sunday dinner.

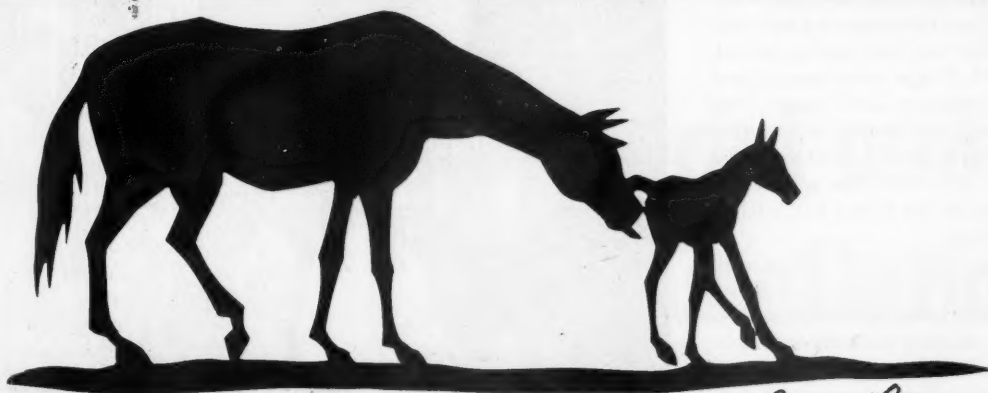


L. P. gas range at Camp Dudley helps solve the problem of feeding large group of boys. This boys' camp is a wonderful summer market for LPG.

There are additional cottages for staff members.

A competent crew of cooks, under the supervision of an experienced chef, prepares meals that are literally "fit for a king." Campers readily admit that the meals play no small part in making their summers at Dudley memorable experiences.

Some time ago the director of the camp, Robert H. Marshall, called together his board of managers to formulate a policy regarding cooking equipment. After a thorough investigation it was decided that, in order to maintain Dudley's superiority in the realm of good food, the old oil-fired restaurant-style ranges in the large main camp kitchen should be replaced by more efficient, modern equipment. L. P. gas ranges were chosen.



*Paul Le May*

# ... brand new LP-Gas with R.I.P.\*

For the first time—LP-Gas with R. I. P.\* The Sid Richardson Gasoline Co., an independent supplier, is offering to its customers and their dealers, through American insurance companies, a complete Liability Insurance Program. It's the first known plan to provide insurance at a cost based on the experience of their distributors. Under this program these independent distributors and their dealers get the following insurance benefits:

1. Broader Coverage
2. Greater Protection
3. Lower Premium Costs
4. Pay-As-You-Go Premiums

Let us tell you about this Insurance Plan and the many other advantages in doing business with

\*Richardson Insurance Plan  
(Title courtesy Hugh B. Long, Alexander & Alexander)

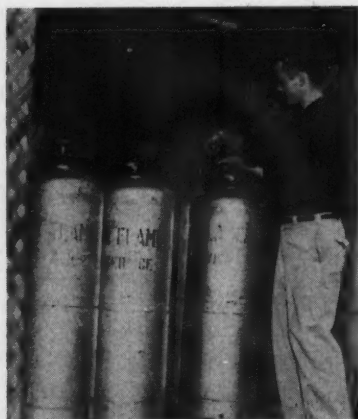
**Sid Richardson**  
**GASOLINE CO.**

**629 FORT WORTH CLUB BUILDING • FORT WORTH, TEXAS**



For many years the cottages of Mr. Marshall and other married members of his staff had been equipped with Waldorf L. P. gas water heaters and various makes of LPG ranges. The convenient, trouble-free service that these had rendered helped make the decision as to what type of fuel was to be used in the dining hall kitchen an easy one.

Consequently, the Magic Chef models 751-1 and 753-1 were selected and two of each were bought from C. A. Kellogg, manager of Griffin's, a nearby Pyrofax dealership. Also purchased was a Parker steam-jacketed, L. P. gas fired kettle. Since there



**Driver attaches cylinder** at rear of building which houses kitchen. Larger buildings have dining room and recreational facilities; boys are housed in small cabins.

were no bulk tank trucks in the vicinity to service larger gas storage facilities at the camp, bottled gas was contracted for through G. H. Eastman, Westport, N. Y. The entire arrangement has proved very satisfactory.

Boys from the city have shown a keen interest in gas arriving at camp in cylinders and in liquid form. The novelty of the idea, however, gives way to wholehearted approval at mealtimes, and since installation of the new kitchen equipment, veteran campers will tell you that the food is "better than ever."

Chef and cooks alike are much enthused about the quicker heating and more flexible service the new ranges and steam kettle afford. The board of managers, consisting of 15 business and professional men who donate their services for a five-year period,



**Camp Dudley chef** shakes the skillet as he helps prepare a meal to satisfy the appetites of some 350 campers. The camp, located on Lake Champlain, is famous for good food.

pronounced the installation a most worthwhile investment, consistent with the high standards upon which Camp Dudley has always operated.

Boys attending Dudley are divided into four age groups, ranging from 10½ to 15. Many attend the camp for several summers, some ultimately becoming counselors.

It is common practice for alumni, now numbering over 8000 and scattered throughout the United States and many foreign countries, to send their sons and even grandsons back to the camp. The Camp Dudley Asso-

ciation, with nearly 2000 dues-paying members, holds a well-attended reunion each year at the camp on the weekend following the closing of the regular eight-week season.

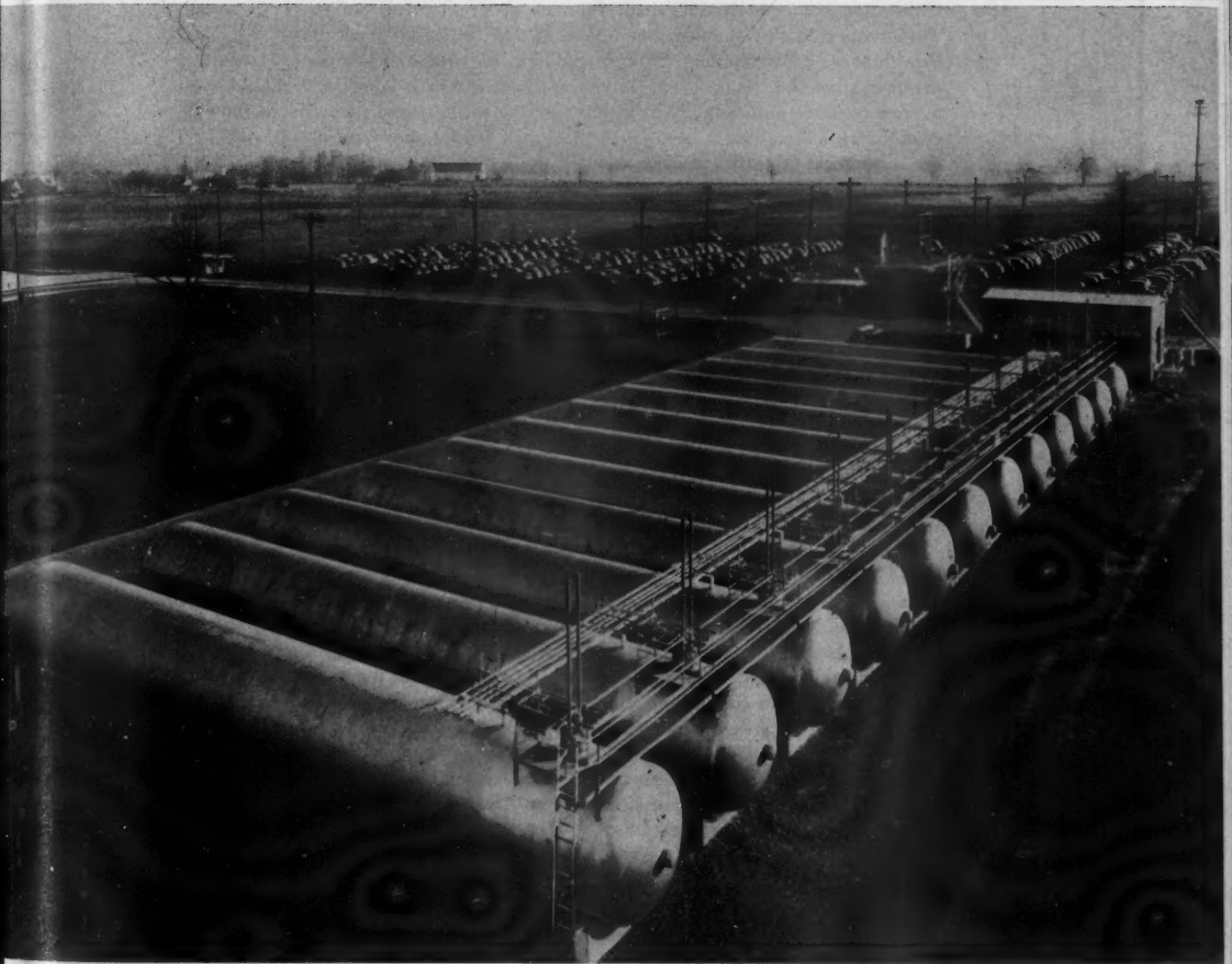
In the summer of 1953 boys came to Camp Dudley from 24 states, and from several foreign countries. The season just past saw several sons of foreign delegates to the United Nations spending an instructive and healthful summer at the camp. Each took home the knowledge that L. P. gas supplies city conveniences in the most remote locations.

**Driver for G. H. Eastman**, firm which supplies L. P. gas to Camp Dudley, unloads cylinders.



Let's make SAFETY Everybody's Business

# Safety in Industrial and Commercial LPG Installations



## SAFETY MEETING

Date \_\_\_\_\_

Time \_\_\_\_\_

Place \_\_\_\_\_



## HOW TO USE THE SAFETY EDUCATION SERIES

This suggested program is a guide for the next SAFETY MEETING, based upon Article No. 20, "Safety in Installing and Operating Carburetor Systems." After the meeting the SAFETY POSTER, which appears on the opposite side of this page, should be posted on your bulletin board as a reminder for the meeting to follow, based on the article in this issue, "Safety in Industrial and Commercial LPG Installations."

# Suggested Program For Safety Meeting

## For "Safety in Installing and Operating Carburetor Systems"

- 1— Attendance record. Who was there; who was absent?
- 2— Unfinished business. Report disposition or progress of all safety projects that were suggested or remained incomplete at the last safety meeting.
- 3— New business. Suggestions of improvements in equipment or safety practices received since the last meeting. Do you ask for them in writing? If verbal, do you make a practice of giving credit in the meeting to the person who made the suggestion? How long has it been since there has been a thorough inspection of all fire extinguishers, fire hoses, etc.?
- 4— Discussion of "Safety in Installing and Operating Carburetor Systems."
- 5— Announce date, study assignments, and any special assignments for the next meeting.

### DISCUSSION GUIDE FOR

#### "Safety in Installing and Operating Carburetor Systems"

In the introduction to the questions for this assignment (see page 84, September issue) we injected the suggestion that there are pronounced similarities between the installation of the carburetion system and the domestic fuel system. This was for two purposes: to make the subject easier for the men who are familiar with domestic safety practices and unfamiliar with those of carburetor installation, and to encourage observation and thought by all members of the staff.

This is a good approach to any such subject. "Reasoning from the known to the unknown" is an established practice in all scientific research, and is equally sound in technical training. We suggest that you follow the same tactics in conducting this meeting. It serves the double purpose of reviewing and emphasizing the previous knowledge, and relating the new knowledge to the previously known facts so the association strengthens the impression and makes remembering easier. We suggest that throughout this discussion you bring out the similarities first, and then discuss the differences.

Starting with the tank, for example, the structural requirements as they relate to holding the fuel are the same. Starting with the information on the label, we find the working pressures are the same. The general shape is the same; proportions may differ because of space limitations in mounting on the vehicle. Liquid fill valve and vapor return valve are provided; the same check valves and excess flow valves are required. Gauge and "10% valve" are both present.

Instead of having just one service outlet, the motor vehicle fuel tank has two—liquid and vapor. Why? Both these valves are equipped with excess flow valves, while the domestic tank has an excess flow valve at the service outlet only if it is designed for liquid withdrawal. Why this difference? Is it because of the difference in service, or in location?

It is a good idea to keep a copy of NFPA Pamphlet 58 on the table for ready reference during these meetings. It forms the basis for all of the approved practices in fuel storage and handling, both on the ground and in mobile installations. And there is a reason, based on experience, behind every sentence in the pamphlet. It is not just somebody's "behind the desk" idea.

All of the material in Pamphlet 58 is the work of technical committees of the Liquefied Petroleum Gas Association, the Compressed Gas Association, the American Society of Mechanical Engineers, and the National Fire Protection Association. These committees include men from all the related activities of those industries and professions. The regulations are, above all other considerations, practical.

The provisions are extensive; they are "a lot to remember." Remembering becomes easier if you understand the reason behind the regulation. This is not given in Pamphlet 58, but most of them can be figured out from the experience of a group such as yours.

Why not go over the questions on page 84 of the September issue, finding not only the answers, but the reasons for those answers?

**ANSWERS TO SEPTEMBER QUESTIONS APPEAR ON PAGE 78**



# It's dry in Texas

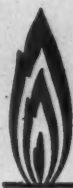


**—and it's dry when you get it!**

When you buy quality you like to see it handled "right side up with care" on its way to you. Isn't that so? Then note these facts about Puregas:

- ① Puregas is dry when it goes into those Puregas tank cars. And the cars are dry.
- ② Puregas exceeds NGAA specifications.
- ③ Puregas is free of contamination.

For complete information on Puregas—availability and prices—write or call any of The Pure Oil Company offices at the right.



## Puregas

**Be sure  
with Pure**



LPG sales offices of The Pure Oil Company are located in Chicago, Illinois . . . Tulsa, Oklahoma . . . Minneapolis, Minnesota . . . Houston, Texas.

## Safety in Industrial and Commercial LPG Installations

By Carl Abell

**C**OMMERCIAL installations are generally considered those which are installed for the service of such establishments as auto courts, restaurants, bakeries, shops, resorts and small businesses where there are employees who control the use of the gas. The installation generally bears close resemblance to a large sized domestic system and the installation procedure follows the same principles and regulations and is closely parallel.

Industrial applications are generally understood to be those in which the gas is used in manufacturing processes, or to supply heat for manufacturing plants. In some cases these installations supply a dilute mixture of gas with air to match utility gas which is the principle source of supply, but in many instances the L. P. gas is used in suitable burners calibrated for the high Btu content fuel.

There is one very important difference which should be considered in selecting the site for the tank. The domestic installation is a private affair and is located where it is not readily accessible to the public. The commercial installation is generally located where there is a great deal more human activity and in many cases the tank location is overrun by people on foot, in motor vehicles, or even on horseback.

It is of utmost importance that the tank should be placed where it will not be affected by the heat of any conflagration which may take place

in the neighborhood. The minimum distances from combustible buildings as specified in Pamphlet 58 should be carefully observed and, in addition, the tank should be placed if possible where it will not be convenient for employees to pile such things as combustible rubbish and packing cases against it or in the vicinity. It should be located where it will not be too tempting to people who like to tamper, and it should either be out of the way of passing traffic or adequately protected if it must be close to a vehicle lane.

If you can locate the tank where all these provisions are favorable and

it is still in a place convenient for access when you wish to fill it, you have indeed selected a good location for the commercial installation tank.

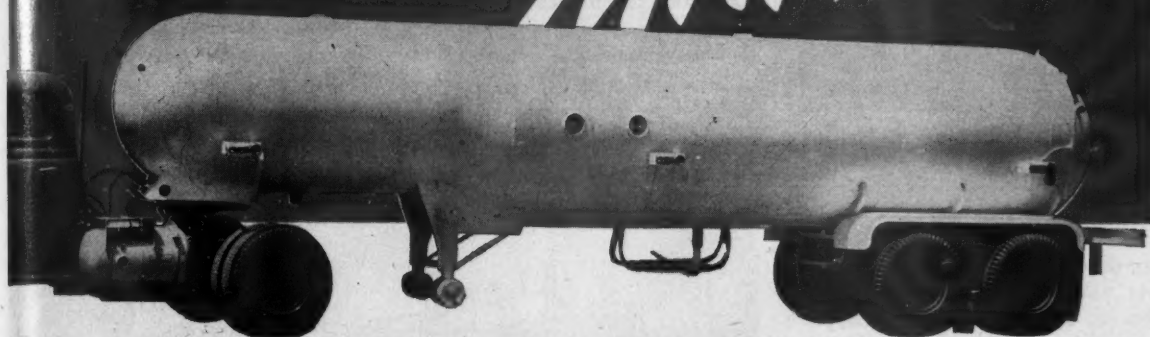
For safety, as well as for satisfactory operation, it is important that the tank shall be large enough to supply the vaporized gas required when all of the customer's equipment is operating at maximum. Appliances require the most gas during periods when the atmospheric temperature is so low that the rate of vaporization is materially slowed down. If the system fails to make enough vapor to support the fires some of them are going to go out. In case of automatic



It takes 16 cylinders to supply heating fuel for this motel in Kentucky.

the LMC

# MONEY MAKER



7200 gallon — 250 lb. W. P.

6564 gallon net payload propane

5860 gallon net payload butane

**the LMC money maker  
means:**

**low trailer investment**

**low tractor investment**

**high payload**

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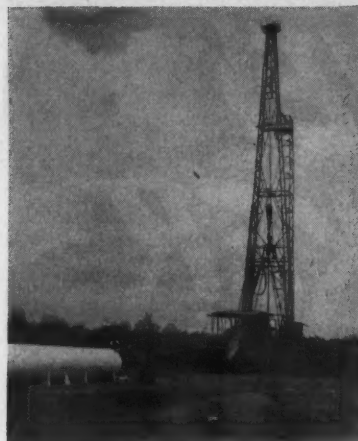
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**Skid tanks** should be mounted level, out of the way of the operation, and readily accessible for filling.

appliances, this will be inconvenient but not hazardous, provided, of course, that every automatic appliance is equipped with a 100% safety shutoff device in accordance with the requirements of Pamphlet 58 and the various state codes.

It is highly undesirable to have manually controlled fires, such as are used for cooking, go out for lack of sufficient vaporized fuel, because at the time of extinguishment the fire might not be attended and the result would be the escape of gas into the kitchen.

Tables 1 and 2 are widely used guides for the sizing of customer tanks for all sorts of domestic, commercial and industrial applications. It should be borne in mind that these figures are minimum and that it is always advisable, if the customer can be so persuaded, to use a tank even larger than is indicated by the figures.

These tables apply only to installations in which fuel is vaporized from atmospheric temperature. For large installations in which a vaporizer is required and fuel is withdrawn in the liquid form, the sizing of the storage tanks should be based on available space, relation of investment to use, and the economics of delivery.

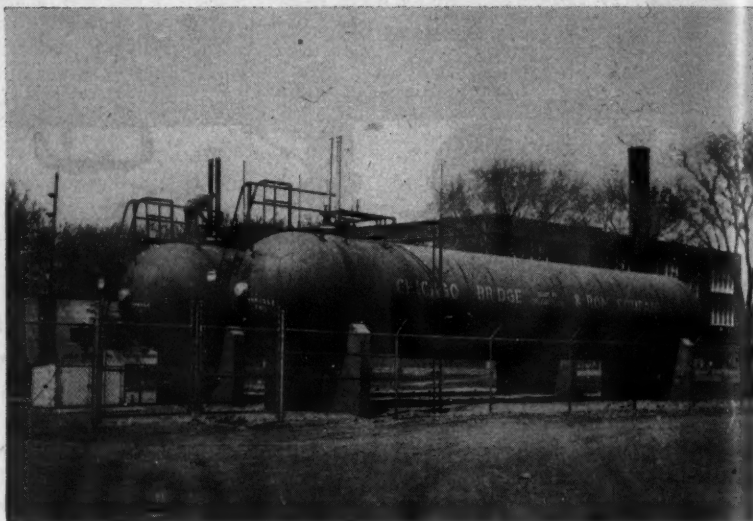
While commercial and industrial tanks are subject to the same hazards that occur in private domestic installations, the frequency of exposure is much greater due to the higher concentration of people and vehicles in such locations, plus the fact that

many of the people who are around the installation have no idea of the hazards involved. For this reason there should never be any compromise with the safety of the foundations. Only solid masonry should be permitted and the piers or saddles should have firm footings in the ground.

There was a recent case in Kentucky where this precaution was not observed. The tank behind a store was sitting on piled concrete blocks, laid up without cement. One evening some boys knocked the tank off the

properly set to protect a 100-lb operating pressure tank could not possibly hold propane on even a moderately warm day. All facts point to the extreme desirability of using 250-lb working pressure tanks for these commercial and industrial applications.

Most of the commercial and many of the small industrial applications will require vaporized fuel taken out of the top of the tank. In the case of domestic installations it is desirable to reduce the pressure by means of a regulator at the tank outlet. If the



**A good industrial installation** nearly completed. It is out of the way, according to the rules, and well protected.

loose foundation, rupturing the pipe. A fire and explosion followed with serious consequences. This accident would not have occurred had the tank been sitting on adequate foundations.

Every effort should be made to prevent the use of low pressure or inadequate tanks in these commercial and industrial installations. Where the local fire authorities take jurisdiction, this is not likely to happen. But the wise dealer will prevent its occurrence under any conditions if it is humanly possible.

A tank may be adequate for butane or high butane content mixture and may be legal under the state code if used with those specific fuels. But there is no way of guaranteeing that no one will ever put propane into such a tank. A pressure relief valve

fuel consumption is high or the line is unusually long it will be desirable to use at least two regulators in the system; the primary regulator located on the tank delivering the fuel at a pressure of between 10 and 15 lb; the secondary regulator is located at the building and takes the pressure on down to the normal appliance pressure of 11-in. wc.

Either copper tubing or iron pipe may be used between the tank and the building, but in either case it should be adequately protected from physical and chemical damage, and it should be large enough to carry the maximum load that will be pulled by the appliances.

Buried tubing or piping should be at least 2 ft underground to protect it against heaving of the surface if in frosty country and, at any rate, to



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protect against working of the surface soil in connection with any paving or construction operations that may take place on the premises.

While copper tubing is ordinarily more durable than iron pipe, there are certain acid soil conditions which make the use of copper tubing inadvisable without very special protective measures. If iron piping is to be laid under paving of any kind, it should be thoroughly cleaned, coated with asphalt and given a protective wrapping. The backfill should then be thoroughly tamped around the pipe to eliminate any channels through which leaking gas might travel along the pipe into a building.

the overhang of any vehicle operating in the area.

In addition to the above precautions, the Factory Insurance Association booklet titled "Recommended Safe Practices" calls attention to the need to make special provisions in mounting tanks on foundations to provide protection against the natural forces which insurance companies class as "Acts of God." They recommend that the tanks shall be securely anchored to the foundations to resist earthquake forces, and also that they shall be mounted in such a manner as to permit expansion and contraction.

Current engineering practice in

cial installations will be made on sites not subject to flood, this possibility should always be considered when building on low ground. Even heavy steel tanks are quite buoyant when empty, which is evidenced by the fact that in several cases tanks buried 2 ft underground have come up and floated away during floods.

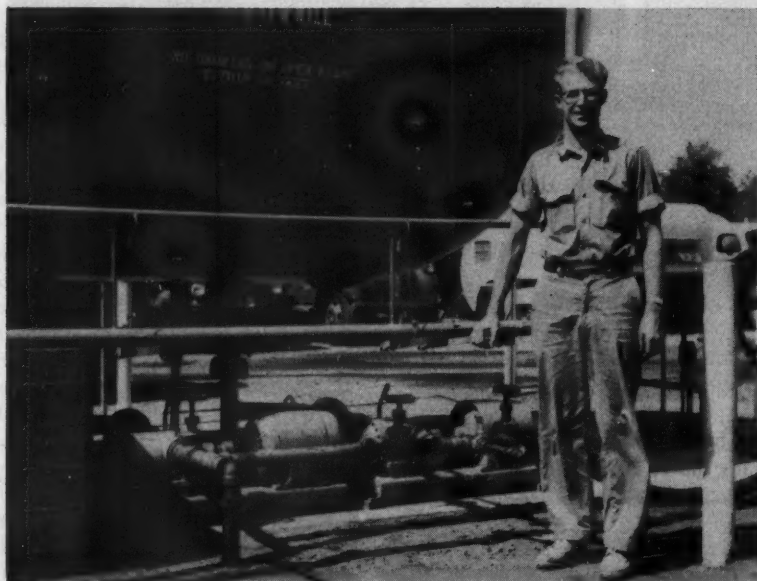
Consideration of these movements due to natural forces emphasizes that it is imperative to provide high strength piping for all of these installations where such conditions may occur. The California Industrial Accident Commission takes these requirements so seriously that the California safety orders require the use of 400 psi steel pipe and fittings for all such installations within the state. This high strength piping is necessarily very rigid, and it is therefore good safety practice to provide either unusually long offsets in the piping or flexible sections so the movement due to temperature changes will not rupture the piping.

Skid tanks are frequently used in temporary or isolated operations such as oil well drilling or irrigation pumping. These jobs are generally not exposed to fire hazards from outside sources, or to extreme traffic hazards, so the requirements as to location are that the tanks shall be accessible for filling but out of the way of normal traffic or field operations.

Unless the ground is firm enough to support the weight of the filled tank on the skids, it is a good idea to lay down temporary foundations offering footing sufficient to maintain the tank in a level position. This is important because the tank gauge will not read correctly unless the tank is properly leveled in both directions. This condition might lead to escape of fuel due to overfilling.

As is the case with domestic and industrial installations of a permanent nature, the fuel lines in these installations should be buried to a safe depth. This will in all cases be deep enough that the line will not be subject to any stress from vehicles passing over it or from the heaving of ground due to frost in case the operation continues through the winter.

Pamphlet 58 sanctions the use of mechanically operated positive shut-off valves at the fuel outlets of these storage tanks in lieu of the custom-



**Mechanically operated** shutoff valves with near and far remote control protect the fuel in this tank.

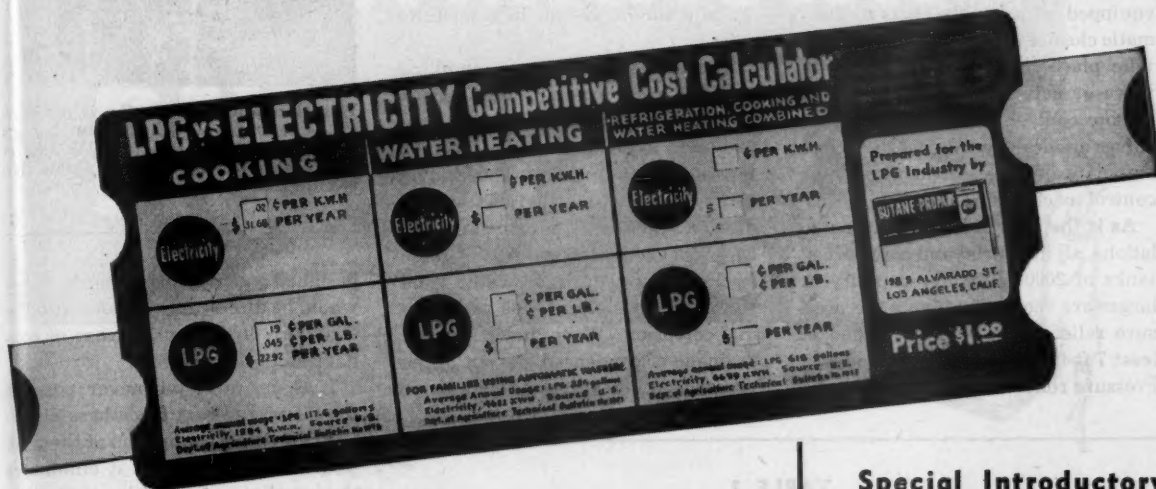
These are standard safety precautions in installing utility gas lines and they should have equally scrupulous attention in the installation of L. P. gas.

In case the tank is located where it is exposed to the hazard of passing vehicles it should be thoroughly protected from collision, either by a heavy fence supplemented by crash posts made of 4-in. iron pipe filled with concrete or with a 14-in. high cement curb placed far enough away from the tank to prevent crash from

mounting large tanks is to strongly key the tank to the foundation pier nearest the pipes and leave the other end free to move back and forth on the second pier. The Factory Insurance recommendations and Pamphlet 58 also include the stipulation that adequate anchorage or pier height should be provided to prevent floating of the tank when the site is covered with flood waters, also to provide barriers and fenders to divert heavy floating debris. While many industrial, agricultural and commer-



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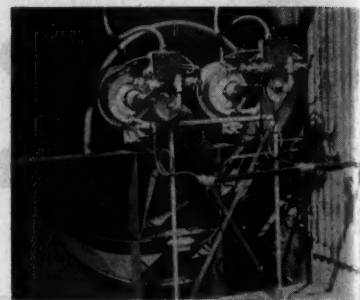
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any excess flow check valves. Valves of this type are frequently used in large installations. These valves come in two types, one operated mechanically by a lever and the other by a hydraulic control. Both types are generally installed with remote control and either system may be equipped with fusible plugs so automatic closure of the shutoff valve will take place in case of a fire at the valve or between the valve and the remote control. Both types of these valves are designed so that they close automatically unless held open by the control mechanism.

As is the case in bulk plant installations, all industrial and commercial tanks of 2000-gal. water capacity or larger are required to have the pressure relief valve vents extended at least 7 ft into the air above the tank. Pressure relief valves of suitable size

are also required in the piping between each pair of valves that may be closed. In all congested locations and adjacent to traffic, the discharge from these pressure relief valves should be provided with a conduit to carry it either into the main stack over the tank pressure relief valve or up to a similar height in a separate tube.

In case dry hose is used for filling tanks in such locations it is recommended that a blowdown tube be provided for emptying the hose before it is disconnected. This should terminate at a safe height and be directed upward. Loose fitting rain caps are needed on the tips of these stacks to prevent rain water from running back to the valve and causing corrosion. Weep holes for the drainage of condensed gas out of the pressure relief valves should be so



This complicated installation is the control end of two liquid phase burners which shut down automatically in case of failure of the pilot, the gas supply, the electric supply, or the blower.

designed and positioned that no flame would be directed from them onto the structure of the tank in case of conflagration.

It is desirable whenever possible to connect the bulk truck hose directly to the filling connection of the tank if this can be done, as it eliminates the installation cost and any possible future maintenance problems in connection with a filling line constructed of pipe. If a pipe extension is necessary, it should be thoroughly protected from hazards of passing traffic.

It is desirable to maintain the lowest practical pressure in service lines leading from the tank to the point of consumption. Therefore, we place a regulator at the tank outlet. For small installations where the tank is located reasonably close to the point of consumption a single stage regulator will generally meet the demand.

Where the service line is exceptionally long, or in cases where gas is required at both appliance pressure and some higher pressure at the point of consumption, a primary regulator reducing pressure to a suitable low poundage is located at the tank and a second regulator reducing the line pressure to 11-in. wc for the appliances is mounted outside the building. The regulator at the building must be vented so that any discharge due to ruptured or leaking diaphragm will not be discharged or drawn into or under the building.

If vaporizers are required to supply sufficient fuel to the utilization equipment, these vaporizers should be located at a safe distance from the point of connection of the hose when filling the tank. The minimum distances between the vaporizer and the

TABLE 1

If this is your lowest outdoor temperature  
(Average for 24 hour period)

Freezing 20°F. 10°F. 0°F. -10°F. -20°F. -30°F.

And this is the most gas you will need to vaporize per hour. (Not absolute maximum, but average rate of withdrawal in 8 hour period)	50 CFH 125,000 B.t.u./Hr.	115 Gal.	115 Gal.	115 Gal.	250 Gal.	250 Gal.	400 Gal.	600 Gal.	Size of Customer Tank Needed
	100 CFH 250,000 B.t.u./Hr.	250 Gal.	250 Gal.	250 Gal.	400 Gal.	500 Gal.	1000 Gal.	1500 Gal.	
	150 CFH 375,000 B.t.u./Hr.	300 Gal.	400 Gal.	500 Gal.	500 Gal.	1000 Gal.	1500 Gal.	2500 Gal.	
	200 CFH 500,000 B.t.u./Hr.	400 Gal.	500 Gal.	750 Gal.	1000 Gal.	1200 Gal.	2000 Gal.	3500 Gal.	
	300 CFH 750,000 B.t.u./Hr.	750 Gal.	1000 Gal.	1500 Gal.	2000 Gal.	2500 Gal.	4000 Gal.	5000 Gal.	

Then make sure your tank is at least this big (If you can keep it half full or more)

Table courtesy Fisher Governor Co., Marshalltown, Iowa.

TABLE 2

If this is your lowest outdoor temperature  
(Average for 24 hour period)

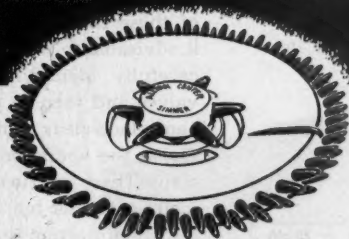
Freezing 20°F. 10°F. 0°F. -10°F. -20°F. -30°F.

And this is the most gas you will need to vaporize per hour. (Not absolute maximum, but average rate of withdrawal in 8 hour period)	10 CFH 25,000 B.t.u./Hr.	1	1	1	1	1	1	2	How Many Cylinders to Install
	25 CFH 62,500 B.t.u./Hr.	1	1	1	2	2	3	4	
	50 CFH 125,000 B.t.u./Hr.	2	2	3	3	4	5	8	
	100 CFH 250,000 B.t.u./Hr.	4	4	5	6	7	10	20	

Then install at least this many  
100 pound cylinders

Table courtesy Fisher Governor Co., Marshalltown, Iowa.

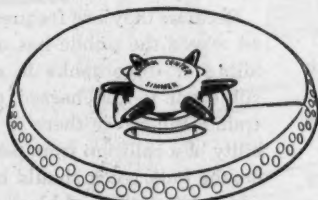
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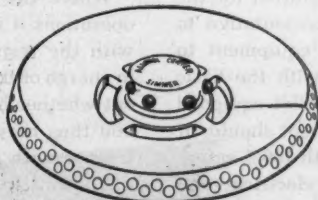
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TABLE 3

**Propane Capacities in 1000 BTU per Hour for Pipes  
of Different Diameters and Lengths**

To be used for figuring Low Pressure Piping-Based on 6 oz. per sq. in. press.  
Capacities are for Pressure Drop of 0.5" W. C.

Length of Pipe in Feet	Diameter of Pipe, Inches									
	1/2"	1"	1 1/4"	1 1/2"	2"	3"	4"	5"	6"	8"
15	428	793	1,550	2,450	5,090	13,600	28,200	49,200	77,600	159,000
30	302	620	1,080	1,710	3,500	9,680	19,800	34,800	54,700	112,500
45	247	509	890	1,410	2,850	7,930	16,300	28,600	44,300	92,000
60	214	443	775	1,220	2,530	6,620	14,100	24,600	38,800	79,400
75	181	398	683	1,080	2,220	6,030	12,700	22,200	34,800	71,400
90	174	365	635	985	2,060	5,550	11,600	19,800	31,800	65,000
105	161	332	587	918	1,900	5,240	10,800	18,700	29,400	60,300
120	151	317	547	864	1,750	4,920	10,000	17,500	27,600	57,200
150	138	285	491	778	1,590	4,280	9,300	15,500	24,600	50,800
180	126	254	444	705	1,430	3,960	8,080	14,100	22,200	46,000
210	116	239	413	650	1,330	3,650	7,600	13,200	20,600	42,800
240	108	222	388	612	1,260	3,410	6,970	12,200	19,500	39,700
270	103	206	365	580	1,170	3,260	6,650	11,600	18,200	37,300
300	95.6	199	350	547	1,120	3,100	6,350	11,100	17,500	35,700
450	80.6	159	284	444	905	2,530	5,070	8,880	14,100	28,600
600	68	139	239	380	775	2,140	4,440	7,610	12,000	24,600

Table courtesy Fisher Governor Co., Marshalltown, Iowa.

TABLE 4

**Selection of Copper Tubing Type "K" For Low Pressure Service  
Pressure-11" Water. Tubing Size is O.D.**

Length of Tubing in Feet	LP Gas in Cubic Feet and BTU Per Hour							
	5 cfh 12,500 BTU/HR	10 cfh 25,000 BTU/HR	15 cfh 37,500 BTU/HR	25 cfh 62,500 BTU/HR	30 cfh 75,000 BTU/HR	40 cfh 100,000 BTU/HR	60 cfh 150,000 BTU/HR	80 cfh 200,000 BTU/HR
10	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
15	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
20	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
25	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
30	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
40	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
50	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"
75	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1"
100	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1"	1"
150	1/4"	1/4"	1/4"	1/4"	1/4"	1/4"	1"	1"

Based on Pressure Drop of 1" W.C. for Length of Tubing Selected

Table courtesy Fisher Governor Co., Marshalltown, Iowa.

tank range from 5 to 15 ft, depending on the capacity of the vaporizer. Wherever such close mounting of vaporizers occurs and wherever direct-fired tank heaters are used to produce vaporization in cold climates, it is obviously advisable to extend the filling line a considerable distance away from the tank so there can be no possible flashback when the hose is disconnected.

All appliances or burning equipment used in either commercial or industrial accounts come under the standard requirement that a pilot light shall be 100% safety shutoff type, so both the pilot and the burner valves will be closed in case of pilot extinguishment. A further precaution applying to heaters wherever transients or incompetents are housed is that these heaters shall be vented. This applies to hotels, motels, guest

accommodations of all kinds and such public institutions as orphanages, hospitals, sanitariums, rest homes and all of their appurtenant buildings.

Wherever industrial installations are made in plants that do not have their own safety engineering department, it is a wise precaution for the LPG distributor's representative to check the utilization equipment to see that it conforms with the basic safety standards. All pilot equipped appliances and equipment should, of course, be supplied with 100% safety shutoff controls. All electrical and hydraulic regulating devices on burner controls should be so designed that in case of failure of power or pressure the burners will automatically be turned off.

On all small burner and heating equipment it is desirable to make a connection with copper tubing or

iron pipe if practical to operate the equipment in this manner. If it must be operated through flexible hoses, as in the case of cutting torches or in gas fired irons in tailor shops and all similar applications, there should be a shutoff valve behind each hose and the operator should be trained to close this valve before leaving the equipment for luncheon periods, overnight or when finishing a job.

In any industrial or commercial installation there is likely to be a turnover of help charged with the responsibility of operating the fuel withdrawal systems. The possibility of accidents due to errors on the part of these untrained employees makes it advisable to work out a method of carefully identifying all control valves and then to post in a prominent place clear written instructions giving the operational details of the plant. These instructions should also include details for the operation of the fire protection system of the plant as far as they relate to the gas storage area.

Fire protection equipment should include an automatic sprinkler system, if the storage tank or tanks are large and in congested areas, plus ample supplies of hoses permanently connected to water pipes readily accessible to the storage plant, plus a dry powder system of suitable size located permanently at the storage area.

Because they are frequently located where the public has access, the filling of these tanks is sometimes subjected to the hazard of passing traffic. Wherever there is the possibility of a collision from passing traffic, the bulk truck should be protected by detour or road block signs during the transfer operation.

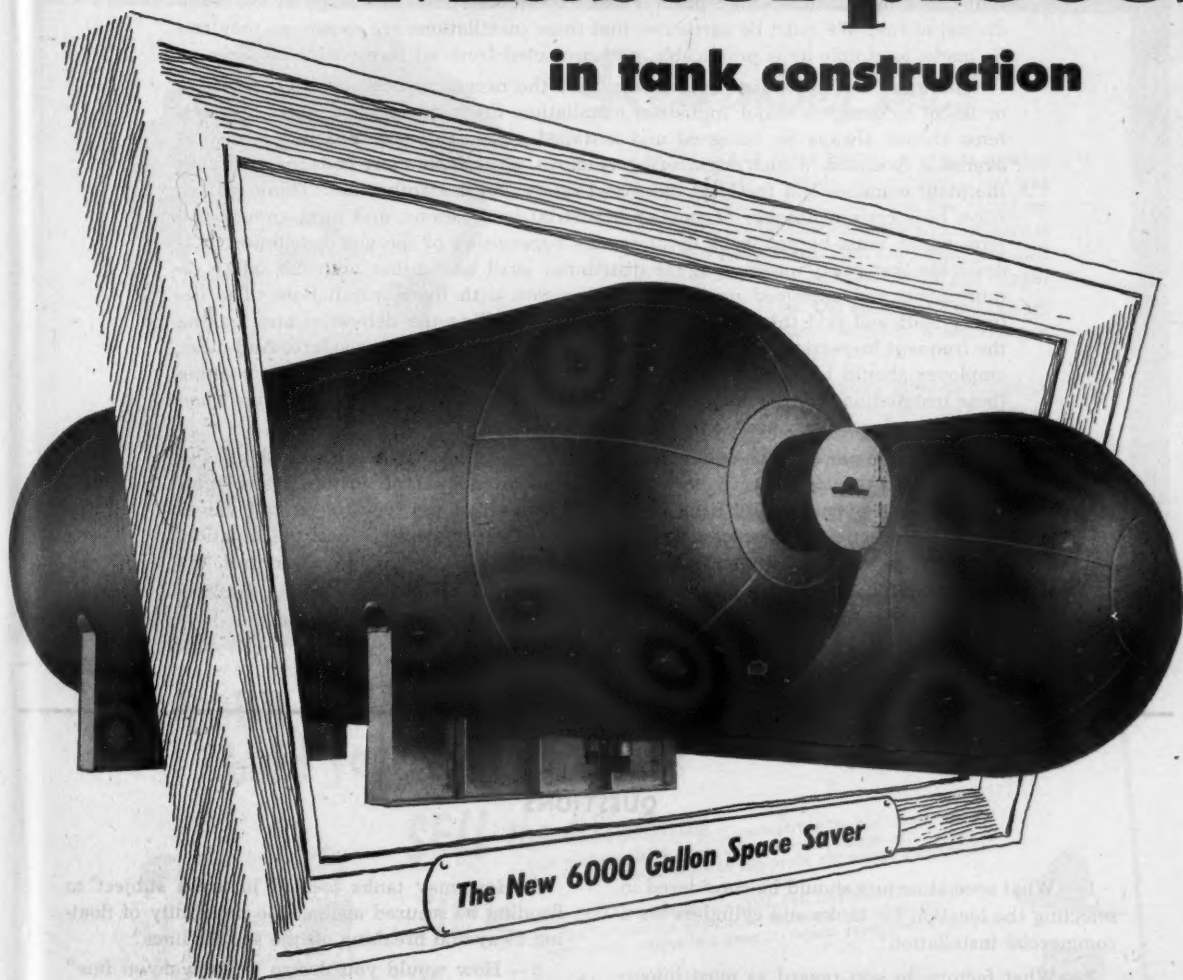
Where the fuel is used for plant operations it is a good idea to check with the responsible plant employee in charge of the fuel operation to find out whether he is ready for delivery and thus prevent the possible interference with plant operations.

And finally after the fuel transfer has been completed, the driver puts the caps on all the plant filling connections, checks to see that his hose is properly loaded on the truck, makes a complete circuit of the truck to determine that everything is ready to travel, and he has finished another important job safely.

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# Questions For Discussion at Twenty First Safety Meeting

There are few other activities of the L. P. gas distributor which call for more knowledge and ingenuity than the design, installation, and servicing of the industrial and commercial installations. They are ordinarily exposed to more hazards from passing people and vehicles than the domestic installations, and it is always likely that changing personnel may place a less experienced man in charge of the withdrawal of fuel. We must be particular that these installations are as safe as they can be made, as simple as is practicable, and protected from all foreseeable hazards.

There are few LPG distributors who have the necessary engineering knowledge or talent to design a major industrial installation. Such storage and utilization systems should always be designed and installed under the supervision of the best available specialist in such engineering ventures, working in close collaboration with the plant engineer and the local industrial safety and fire authorities. There will always be a certain number of smaller industrial installations, and most commercial jobs, which must be put in by or under the supervision of the gas distributor. It is desirable that every employee of the distributor shall be familiar with the safety requirements and approved practices in connection with these installations. The delivery staff will find this information useful in handling the deliveries and making the frequent inspections which should be a part of the delivery procedure. And other employees should be familiar with the principles and practices involved in making these installations so they may be able to take the right action in emergencies when those more logically concerned may not be available.

If, for example, such an emergency should arise, and a distributor's employee is in contact with the situation, if he knows that there is a set of written instructions somewhere convenient, and if he is familiar with all of the types of shutoff valves and with the action of the excess flow valve, he can very quickly control the situation, or direct the efforts of firefighters or civil authorities in their efforts at control.

As usual, the following questions are designed to test the knowledge and thinking ability of the employees, and to stimulate them in gaining further knowledge.

---

## QUESTIONS

1—What special factors should be considered in selecting the location for tanks and cylinders for a commercial installation?

2—What factors do you regard as most important in selecting the location for the tank of an industrial installation at a large manufacturing plant?

3—What hazard might be introduced in a commercial cooking installation if either the tank or the installation is inadequate in size?

4—Why is the use of substantial foundations even more important in commercial and industrial installations than in domestic locations?

5—Why should a tank of 100-lb working pressure that meets all the requirements for storing butane be regarded as inadequate for commercial and industrial installations?

6—How would you determine whether or not a buried fuel line is leaking? How would you locate such a leak in a line buried under a black-top factory yard?

7—How may tanks located in areas subject to flooding be secured against the possibility of floating away and breaking off the service lines?

8—How would you design a "blow-down line" for emptying the liquid from the hose or hoses used in transferring fuel from a tank car or bulk truck used in filling a large industrial tank? Why is this considered necessary when transferring the fuel with a pump, with no compressor available? How can this loss of fuel be avoided when making the transfer with a compressor?

9—Why do most state codes specify that gas fired heaters in rooms occupied by transients or in public institutions shall be vented? Why should these appliances have 100% safety pilot devices rather than manually controlled valves?

10—Why should complete operating instructions be posted in conspicuous places at all commercial and industrial installations? Would it be desirable to have such a set of instructions located at a point not immediately adjacent to the "system"?



# "I've got a friend you should meet"



## Remember me?

"I'm the one in three women who was cooking on a gas range 12 years old or older... just like 10,000,000 other women still are. You called me last spring, showed me what a difference there is in modern gas ranges. And am I glad you did! I'm crazy about my new automatic gas range!

"That's why I think you should call my friend. She's your neighbor who needs a *modern* gas range as much as I did."

She's part of the biggest, most-profitable, easiest-to-sell replacement market you ever saw. And she's easy to meet, too... just tie in solidly with the BIG Fall A.G.A. Old Stove Round-Up.

You'll be glad you did. Because that's the sure way to sell your share of the 1/4 million replacement Gas Ranges this *BIG* promotion will put into America's homes.

## GET YOUR SHARE build your Gas Range sales these 4 ways!

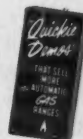


**SELL the difference** Demonstrate the big improvements that modern Gas Ranges offer over old ranges still in use. You'll make more sales of top-profit automatic gas ranges.

**TIE in** with your Gas Company's BIG Fall Old Stove Round-Up... the traffic-building promotion that sold over 250,000 replacement ranges last year... makes sales year after year!

**Demonstrate** right on your sales floor. Use the 15 tested, proved demonstrations that make shoppers stop, look, listen—and BUY! Write for FREE BOOKLET "Quickie Demos" that shows you how to dramatize the many advantages of modern Automatic Gas Ranges.

**Pep up your sales force** to a new high in selling efficiency with this tested sales-training film "How To Sell More Modern Gas Ranges." Write us today for full information.



For Full Information, Consult Your Gas Company, Your Gas Range Manufacturers' Salesman or Write to:  
**GAS APPLIANCE MANUFACTURERS ASSOCIATION, INC.** 60 East 42nd Street, New York 17, N.Y.

# Answers to September Safety Questions

Questions for Safety Article No. 20, "Safety in Installing and Operating Carburetor Systems," appeared in the September issue on Page 84. Here are the answers.

1—The tank should be designed to hold propane; working pressure at least 200 psi if manufactured under ASME code; at least 250 psi if manufactured under API-ASME code.

2—You should know (a) that it is a "code" tank with the proper working pressure; (b) that the valves comply with the requirements stated in Pamphlet 58; (c) that the tank complete with fittings and valves complies with the code of each state in which the vehicle is expected to be used.

3—There is no way of knowing whether a non-code tank complies with the requirements or is adequate for the storage of L. P. gas.

4—(a) The gauge would not read correctly; (b) the outage valve would not indicate the true liquid level in the tank; (c) the pressure relief valve might be located where it would discharge liquid instead of vapor.

5—Overfilling an LPG tank puts liquid into the space which should be filled with vapor to allow a proper cushion for possible expansion of the fuel due to rising temperature. A customer who requests you to overfill his tank should be told of the hazard of discharge of liquid fuel through the pressure relief valve. If he still insists he should be refused. There is probably nothing in your insurance policy covering you against liability from overfilling tanks, but courts are quite likely to rule in favor of the insurance company where it can be proved that the insured has violated an established safety rule.

6—The outlet of the pressure relief valve should terminate outside the trunk and be pointed upward. Adequate ventilation should be provided in the bottom of the trunk.

7—The working unit of a two-way radio in the trunk with an LPG fuel tank would definitely be hazardous. The heat of the tubes or an arc from a broken connection could ignite any loose fuel present in the trunk. It has happened with the little fuel escaping during filling of the tank.

8—As in a domestic installation, the fuel line

should be buried below the frost line. Where it passes under the roadway it should be protected against impact damage from above or from the shifting of the roadway soil under heavy loads. The most common procedure in such cases is to use copper tubing for the fuel line, running it through heavy iron pipe beneath the roadway.

9—No pressure relief valve should be pointed in a direction that would endanger a person. The safest way is to follow the clause in Pamphlet 58 which says it shall be directed upward. A pipe elbow screwed into the end of the PR valve will fix it up.

10—The liquid and vapor outlet valves at the tank should be closed, and the engine should be run until it has used up all the fuel that will come through the regulator.

11—If stored indoors the tank must be emptied and the valves kept closed. If outdoors where it is safe against tampering, and at distances from buildings complying with Section B.5 of Pamphlet 58, the fuel may be left in the tank. No such tanks in storage may be stacked.

12—Just as is the case in domestic installations, it is desirable to use low pressure in fuel lines where possible. With the vapor withdrawal system, this is possible. With the liquid withdrawal system, placing the primary regulator at the tank, away from the source of heat for vaporization, would produce the risk of a freeze-up, which would make continued operation impossible. To get the extra benefits of the liquid withdrawal system we must use a liquid fuel line under tank pressure, and then make sure that the fuel line will be safe under that pressure.

13—The vapor withdrawal fuel line is not protected by an excess flow check valve. Therefore, if the regulator valve should leak due to lodgement of solid matter under the seat or any other cause, the fuel line will be subject to the pressure in the tank. So the fuel line between the primary and secondary regulators should conform to the specifications for liquid fuel lines, including threaded connections.

# FILL 100 POUND CYLINDERS!



## 8 MODELS AVAILABLE

### 3 WITHOUT FUSE PLUG

- 7555-1½" Acme filler connection
- 7555R-1½" Acme filler connection
- 7555W-POL filler connection

### 5 WITH FUSE PLUG

- 7555F-1½" Acme filler connection
- 7555RF-1½" Acme filler connection
- 7555WF-POL filler connection

## SPECIFICATIONS

- Forged brass body.
- ¾" male NPT cylinder connection and POL service outlet.
- Rapid filling capacity.
- Liquid carried through baffle tube into cylinder—no interruption of gas service.
- Choice of filler connections.
- Time-tested RegO Shut-Off and Relief Valve design.
- Fixed Liquid Level Gauge with tube and liquid deflector.
- Compact design . . . valve protrudes only approx. 5" above cylinder spud.

REGO and Multivalve are registered trade marks of The Boston-Blessing Company





**John Taylor**, Atlantic States public relations manager, explains to a safety group committee the functions and connections of a standard gas meter.

## Employee Safety Committees Reduce Accidents, Boost Morale

**O**RGANIZATION of employee safety committees by Atlantic States Gas Co. of Pennsylvania Inc. has reduced accident hazards, uplifted workers' morale, and attracted the attention of insurance companies. This effort illustrates the benefits obtainable from a management directed program built around the core of periodic employee meetings and directed toward safety guidance.

The three-pronged program has as its principal objectives (1) teaching methods of safeguarding equipment through proper use of safety devices, (2) making personnel safety minded, and (3) giving customers a minimum of safety education by servicemen.

The plan has been in effect since before World War II, largely because of the insistence of a former president, Col. G. A. Burrell, since retired. A few years ago the company employed a safety director who was solely responsible for promoting this pro-

gram. He was later transferred but the program was carried on.

Atlantic States Gas Co. covers the southeastern quarter of Pennsylvania, upper Delaware and Maryland. Headquarters are at Lancaster with branches at Teleford, Burnham and Chambersburg, all in Pennsylvania. An affiliate, Atlantic States Gas Co. of New York, has offices at Cortland and Horseheads in that state. There are from 25 to 50 employees at each branch, and each has a safety committee.

Each committee consists of six key employees chosen by the local operating manager from the bulk plant personnel, and picked for conscientiousness and ability. There are two chairmen who rotate in this position. One of them is field man, the other an inside worker, and both are permanent members of the committee. The other four members change every two months so that all work-

ers receive the benefit of committee membership.

The chairmen receive an extra \$25 a month for the time they put in; the four members receiving \$5 for each monthly meeting they attend.

Time of meetings is set at the discretion of the local branch manager, who, of course, attends as an observer. They may be held during or after regular working hours on the company premises.

At these sessions problems and pointers are discussed in open forum, and safety suggestions made. All is recorded in a detailed report. The minutes of a typical meeting reveal some interesting comments:

"It was suggested that, upon entering a home and finding the meter minus a shut-off key, one be installed at once. . . . Bug screens should be carried on tank or service trucks to be installed when no screen is on the site. . . . Tank truck drivers were

# *5 Reasons why* **PHILGAS** \*

**is the largest selling brand of LP-Gas!**

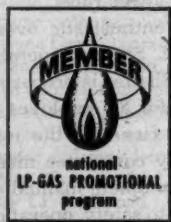
**1 High Quality Product.** Phillips modern fractionation methods, plus rigid product control tests, insure a clean, uniform fuel with a high thermal content.

**2 Dependable Supply.** Phillips ample storage facilities, modern transportation by pipelines, trucks and tank cars assure you of prompt deliveries of Philgas even in periods of peak demand.

**3 Experienced Engineering.** Phillips maintains a staff of LP-Gas specialists to advise their contract customers on economical plant design and safe efficient equipment. Take advantage of Phillips many years of practical experience in the LP-Gas field.

**4 Effective Marketing Help.** Philgas is the most advertised brand of LP-Gas in America! Promotions and advertising material, scaled to your needs, are available to Phillips contract customers.

**5 Operational Assistance.** Need advice on special operating problems? Phillips contract customers can call on Phillips for assistance at any time. And Phillips bulletins and information service keep you up-to-date on the latest improvements in equipment, newest safety measures, most efficient and economical distribution procedures.



*Write for additional information.*

**ARGEST SELLING BRAND OF LP-GAS IN AMERICA**



\*Philgas is the Phillips Petroleum Company trademark for its high quality LP-Gas or bottled gas (propane, butane).

**PHILLIPS PETROLEUM  
COMPANY**

Sales Department • Bartlesville, Oklahoma



Two men receive instructions on the proper handling of storage vessels from John Taylor.

A new truck driver for Atlantic States receives safety instructions. Note block chocks, and blinker light warning driver not to pull away without disconnecting hose.



asked to make an effort to check for missing service valve caps. When found, replace, and grease shafts.

"Men were told to make as many adjustments as possible when at customer's home instead of turning in reports on work to be done, unless, of course, appliances need parts which you do not have with you. . . . It was suggested that motors be allowed to run idly for a few minutes in the morning during winter in order to warm."

These minutes, signed by the committee chairman, are then presented for review at a general meeting of the entire branch personnel. These general sessions have well planned agendas in contrast to the more intimate, less formal sessions of the smaller safety groups. At these general meetings, also held once a month, a more elaborate program is set up, such as motion picture slides on general safety precautions, talks by insurance executives, or the appearance of manufacturers' representatives who may review their product

from the operating and safety standpoint.

At such general meetings all employees have an opportunity to go over the safety committee proposals and recommendations, reviewing the minutes of all branch committees. Each employee has a chance to give his own personal opinion and suggestions.

The final decision, however, rests with the local operating manager. He selects whatever proposals he deems worthy and forwards them, sometimes with appropriate comments, to the main office of the company in New York City for clearance and possible action.

Besides the prestige accorded employees for their interest at such meetings, which brings them to the attention of executives for possible advancement, certain groups are singled out and rewarded for their advancement of the safety program.

The automobile drivers, for example, may participate in the group driver award plan. This is based on monthly and yearly fiscal reports on

repair costs for various kinds of vehicles. When these costs are reduced, the savings are put aside in an annual fund and distributed among the employees responsible as a sort of Christmas and year-end bonus, according to their individual mileage records.

The results of all this have been highly satisfactory. While no "before-and-after" statistics are available, the company reports show that this safety program has reduced driving accidents considerably; there is less frequency of home accidents attributable to lack of customer education, and the plan has corrected what was formerly a careless attitude on the part of the men.

As John Taylor, public relations manager, sees it: "It's really making our employees fight for safety. The workers who formerly had a tendency to sneer, realize the value of such a program and are quick to follow the methods suggested. The teamwork and concern our staff has shown in its job would never have come about if we had not undertaken such an effort."

Another advantage, as seen by Mr. Taylor, is that the plan has an encouraging tendency to reduce high insurance premium rates. "While we are not now benefiting financially through insurance reductions," he explains, "our company, together with others, would get such benefits if this kind of procedure were put through on an industry-wide level. Then the insurance companies would really sit up and take notice and give the participants the rewards for such activity in lower rates."

Equally enthusiastic over the results is J. E. Shaffer, operating manager. Mr. Shaffer is preparing a safety manual for all employees, based in large measure on the minutes of these safety committee meetings. It is to be a complete manual covering, in addition to safety, operations, sales and customer relations.

Such a detailed manual is extremely valuable in the company's over-all educational program for new employees who assume their duties on a graduated scale as they learn more and more about procedures involved in their particular jobs and are advanced a step at a time. It is equally valuable for seasoned workers who are thus acquainted with new safety and operating techniques.



Typical modern LP-GAS installation by Suburban, featuring dependable, accurate measurement with American 2B-40 meter. Inset shows close-up of meter.



## SUBURBAN means SERVICE...

26 years plus—supplying LP-Gas

### HOW GIANT PIONEER SUPPLIER USES METERED SERVICE IN 16 STATES

Starting 26 years ago with but one customer, Suburban Propane Gas Corporation has become a giant multi-million dollar organization. Operating in 16 eastern states still under the guiding hand of its founder and president, Mark Anton, the company serves every LP-GAS need... is the largest independent marketer of LP-GAS anywhere. Pioneering in the use of gas meters for LP-GAS with the co-operation of the American Meter Company, Suburban

now provides over 240,000 of its customers with "city-type" service by modern LP-GAS meters.

You too, can give your customers "city-type" service, stop out-of-gas deliveries, build customers' confidence in your service, as well as help solve storage problems during peak demand periods. And metered service helps sell more gas and more appliances. For information write for a FREE COPY of "Guide To LP-GAS Metered Service."



**AMERICAN**  
METER COMPANY



GENERAL SALES OFFICE: 1513 Race Street, Philadelphia • Albany  
Alhambra • Atlanta • Baltimore • Birmingham • Boston • Chicago • Dallas  
Denver • Erie • Houston • Kansas City • Los Angeles • Minneapolis  
New York • Omaha • Pittsburgh • San Francisco • Seattle • Tulsa  
IN CANADA: Canadian Meter Company, Limited, Hamilton  
Edmonton • Calgary

The rental of L. P. gas appliances serves as an advertising campaign which results in increased sales of both appliances and LPG for Johnstown Suburban Gas Co.

## Rent It Now — Sell It Later!



Manager M. J. Board shows a prospective customer several of the L. P. gas rental appliances available at Johnstown Suburban Gas Co. Shown here are two griddles, a hot plate, urn burner, water heater burner and deep fat fryer.

"THE advantage is in its advertising value. It shows L. P. gas service to people who might not otherwise see it. And it results in sales later."

Thus, the rental of bottled gas appliances, started by Johnstown Suburban Gas Co. of Johnstown, Pa., nearly eight years ago as an accommodation, now provides what amounts to a five-month demonstration period each summer before thousands of people.

It has paid off, according to M. J. (Jack) Board, secretary-treasurer and manager, not only as a thriving sideline, but in sales of such appliances, and, naturally, in the increased use of L. P. gas.

Johnstown Suburban was formed Jan. 1, 1939, by Jack Board and his father, C. B. Board, still president of the firm. But it wasn't until the late summer of 1946 that the company first handled rental appliances.

"It was the first Cambria county

fair after the war," the younger Mr. Board recalls. "Some of the concessionaires came to us and asked to rent hot plates, griddles and the like. We didn't have any, so we took some trade-in stoves and fixed them up to meet the needs.

"We realized there was a demand for these appliances so we took them on and made them available to volunteer fire companies, church groups, lodges, union locals and any other groups who wanted them. Since 1946 we've had a steady repeat business for picnics and outings."

Johnstown Suburban now has available such rental appliances as deep fat fryers, hot plates, griddles of various sizes, coffee urn burners and water heater burners. New and second-hand appliances are used with equal success. The company charges a fee covering delivery, installation and pickup. The service charge is made on the basis of service rendered. To the Happy Cooking Me-

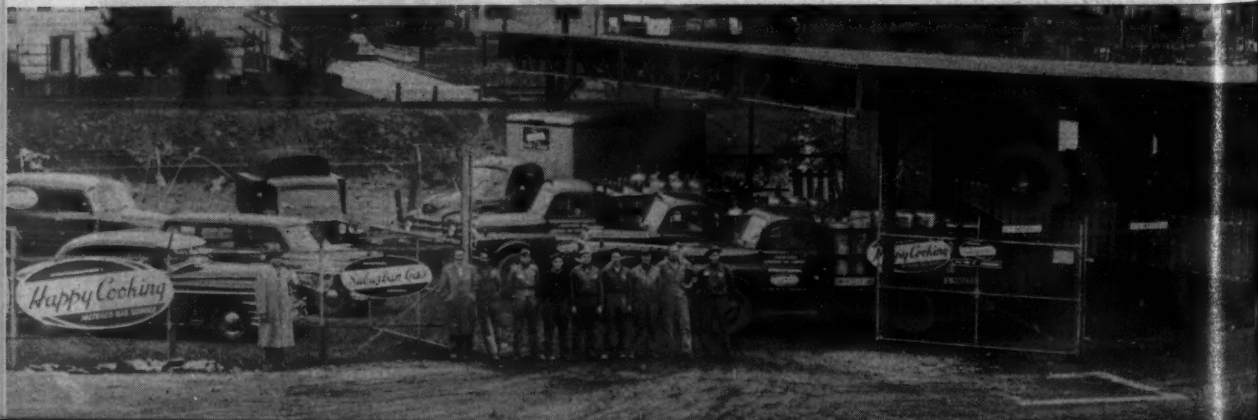
tered Gas Service, which franchise the company holds in the local area, the customer pays only the cost of the actual amount of gas used.

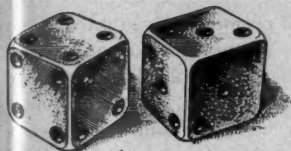
As a safety precaution against overturned cylinders and damaged gas lines, Johnstown Suburban mounts all cylinders against something solid. There has never been any trouble with fire authorities over rented appliances as Johnstown follows Pamphlet 58 carefully.

"The rental service is a great convenience to customers," Mr. Board says, "because they don't have to tie up funds in appliances they'll use only a few days a year."

The rental appliance business is seasonal, the company admits, running from May to September. But no extra personnel are required. In

Johnstown Suburban's new LPG cylinder storage building and truck parking area help speed service for the many picnic calls the firm receives. The company supplies rental appliances within a 20-mile radius of Johnstown, Pa.





## LUCKY SEVEN...

- Greater value for your money** because of our direct sales policy in the U.S. — manufacturer to user, without the usual mark-ups.
- No servicing expense.** No lubrication or adjustments during a long operating period. Our patented mechanical seal is the most trouble-free on the market. Unlike other seals, if it ever needs replacement it can be exchanged easily without removing pump from piping, and without taking it all apart.
- Save expense from costly shut-downs.** Smith Pumps are thoroughly tested to prove there are no defects in materials, workmanship or performance. Reconditioned units must pass the same tests as new ones.
- Our prompt service saves you money.** Emergency orders for parts, repairs, or replacements are given immediate attention. **SHIPMENTS MADE THE SAME DAY, BY AIR IF DESIRED.**
- Smith Bulk Plant Pumps can be directly connected to standard 1800 RPM motors, **saving the expense of special slow-speed motors, or extra gear, chain and belt drive speed reducers.** Truck Pumps are directly connecting to power take-off.
- Operating savings are your edge over competition.** Smith Pumps come in the widest range of sizes on the market, to enable you to choose the one having the right output for greatest efficiency in your service.
- Our aim is to **reduce your cost per gallon pumped.** Smith Pumps are **YEARS AHEAD** of the field in giving you the newest developments in materials, processes, and manufacturing precision, which increase efficiency and service life.

# SMITH PRECISION PRODUCTS CO.

1135 MISSION STREET, SOUTH PASADENA, CALIFORNIA

Telephone PYramid 1-2293 or PYramid 1-2691



**TC-1044 TRUCK PUMP:**

Rated transfer capacity 20 gpm at 500 rpm, directly connected to power take-off. For 1½" piping. Weight 40 lbs.



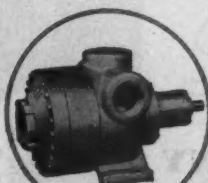
**TC-1044H TRUCK PUMP:**

Rated transfer capacity 35 gpm at 900 rpm, directly connected to power take-off. For 2" piping. Weight 40 lbs.



**TC-2 TRUCK PUMP:**

Rated transfer capacity 50 gpm at 500 rpm, directly connected to power take-off. For 2" or 2½" piping. Weight 100 lbs.



**TC-3 TRUCK PUMP:**

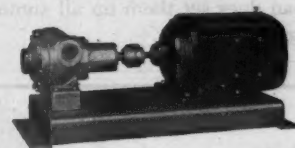
Rated transfer capacity 100 gpm at 500 rpm, directly connected to power take-off. For 3" piping. Weight 130 lbs.

## BULK PLANT MODELS



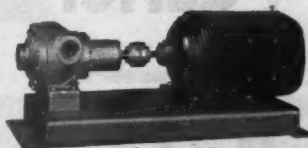
**MC-1:**

Rated transfer capacity 5 gpm with ½ hp 1800 rpm motor and 10 gpm with ¾ hp 3600 rpm motor. For 1" piping.



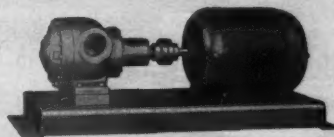
**MC-1044:**

Rated transfer capacity 20 gpm with 1½ or 2 hp motor. For 1½" piping.



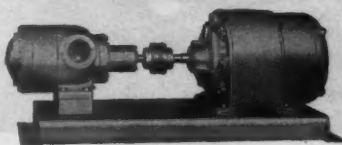
**MC-1044H:**

Rated transfer capacity 35 gpm with 2 or 3 hp motor. For 2" piping.



**MC-2:**

Rated transfer capacity 50 gpm with 3 or 5 hp motor. For 2" or 2½" piping.



**MC-3:**

Rated transfer capacity 100 gpm with 5 or 7½ hp motor. For 3" piping.



**MC-4:**

Rated transfer capacity 150 gpm with 7½ or 10 hp motor. For 4" piping.



those five months Johnstown Suburban has a potential audience of well over 100,000 persons for its service. And those outing-goers can see and be impressed with the advantage of rental L. P. gas appliances—they're portable.

"We can set up the appliances out in a 10-acre field for a horse show, in a church yard or in a tent at a jubilee," Mr. Board points out.

And that's where Johnstown Suburban does set them up all summer long.

The "big show" comes with the Cambria county fair at the county seat in Ebensburg, 18 miles from Johnstown. Opening each year on Labor day, the week-long fair draws large crowds. The fairs from 1946 through 1948 drew between 70,000 and 85,000 people; each one since then has topped the 100,000 mark. The record was made in 1951 with an attendance of 115,000.

"Each one of our cylinders on the fair grounds is identified," Mr. Board says. "At each installation we put up

a sign if permission is granted."

Much of the fair business builds "at home" good will. While some of the stands using L. P. gas are operated by traveling concessionaires, a large number or conducted by local church groups, volunteer firemen, 4-H clubs, Future Farmers of America and others as fund-raising endeavors. Johnstown Suburban services these.

Mr. Board attests to the fact that the rental service brings customers to the company's salesrooms in downtown Johnstown. There is no way to measure sales of appliances that result from the rental service, but the service does make money for the company.

"We've had any number of people come in and tell us they saw our appliances and gas service at a picnic or at the fair, and say this is just what they need for their business or home. Some come to buy a new appliance and some come to buy the used appliance at the end of the season. We are glad to accommodate both."

Johnstown Suburban uses newspapers, radio, telephone, direct mail and personal visits to get its L. P. gas message to the public. Emphasis, of course, is on major appliances—ranges, water heaters, space heaters and clothes dryers.

But as the picnic season approaches, the public is reminded of the rental appliance facilities offered by the company. The old accounts usually are solicited for repeat orders by telephone or personal visits, sometimes by mail.

Newspapers are scanned for advance notices of outings and the chairman of the sponsoring organization soon gets a telephone call or visit from Johnstown Suburban to be told of the appliances available and the advantages of Happy Cooking Metered Gas Service.

Quite frequently a firemen's group or church organization will receive a range or some similar appliance as a donation. Johnstown Suburban will do the work necessary to convert, and another L. P. gas customer is acquired.

As Manager Board says, the rental appliance business for his company is just a sideline. But from May to September of each year life is just one picnic after another for personnel of Johnstown Suburban Gas Co.

**Carter**

**Butane Propane**



**Carter**

When you buy LP-Gas from Carter, you have the assurance of high quality and dependable service. Years of experience in producing and marketing LPG make Carter an unexcelled supplier.

**THE CARTER OIL COMPANY**  
**TULSA, OKLAHOMA**



# which is the QUALITY TANK?

Both tanks look alike, but just ask the owner of an Q C f-built tank! His experience over the years best illustrates the *extra quality* built into every tank—quality you get at a competitive price!

Here are just a few facts on Q C f quality: After the tank seams are welded, *every inch* of seam is X-ray inspected. But even this isn't enough to measure up to Q C f's *traditional* standards! Each U-68 tank is then *stress-relieved* to remove the stresses set up in metal by welding—providing an *added safety factor*!

There are Q C f Storage Tanks for LP-gas, anhydrous ammonia or for any gas or liquid under pressure. Why settle for less, when Q C f's *extra* quality and safety can be yours at a market price? A call to your nearby Q C f Representative will get you all the facts! Q C f Industries, Incorporated, New York • Chicago • St. Louis • Cleveland • Washington • Philadelphia • San Francisco

*Quality you can trust*



... STORAGE TANKS • TRUCK TANKS • SAFETY VALVES

# ac f

## New Products and Trade Publications

To secure further information on products or new publications, fill out the coupon and mail, indicating by number the items desired.

### 1. Automatic Dryer



A new, budget-priced, automatic gas clothes dryer has been introduced by Caloric Stove Corp. The unit is completely engineered, designed and manufactured by the Caloric organization.

This dryer will be a feature in the Caloric product line of gas ranges, gas disposers, built-in gas ranges and gas dryers.

Conveniently located waist-high is the "sifto-bag" lint trap, an ingeniously designed nylon tricot screen, which effectively catches all lint from the air as it is exhausted from the unit. It is quickly removable for cleaning. Extra strength is built into the "sifto-bag" with dacron thread binding and a sturdy, vulcanized fiber collar that fits over the air vent.

This is the first time that the revolutionary "Lo-Heat Hi-Breeze" drying principle is being offered in a Caloric at a low price. This method of using low temperature and a high volume of air, the manufacturer claims, shortens drying time, cuts fuel cost, guards against shrinkage, greatly reduces wrinkling and gives positive protection against excessive heat.

The new Caloric dryer offers the convenience of a downward opening door, providing a handy shelf for loading and unloading the dryer, electric ignition, and durable Nupon finish.

Caloric Stove Corp.

### 2. Kitchen Range



The smartness of crisp black and gleaming white is effectively combined in the Model M-633 Perfection gas range—a 36-in. divided top model with white titanium porcelain enamel front and sides and a black "Tuxedo" top.

There are four Harper-Wyman Universal burners, each with a simmer-set position for "waterless" cooking plus a tiny "keep warm" flame. The aeration trays are black porcelain enamel.

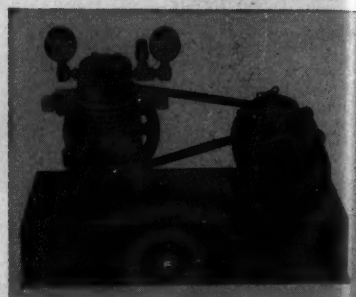
The banquet-size oven has automatic ignition and automatic heat control. The non-tilt oven racks are removable for cleaning. The roll-out, drawer-type broiler has a smokeless grid and pan finished in speckled blue porcelain enamel. Added features are

a window in the oven door and interior oven lighting.

For the storage of pots and pans there's a built-in compartment to the left of the oven and broiler.

Available as an accessory is a black porcelain and chrome lamp, 36 in. wide with a manual time chimer. This is known as the RA 130 lamp. Perfection Stove Co.

### 3. LPG Vapor Pump



Now available is a small vapor pump for the transferring of liquefied petroleum without vapor loss. L. P. gas vapors are withdrawn from the tank being filled with liquid and forced into storage tank, thus creating a differential vapor pressure which causes rapid liquid flow.

This small Krug compressor is ideal for tractor filling, filling of mobile tanks, and draining tanks which are to be moved to new locations. There is no fire hazard or fuel loss from vented vapors. Krug compressor operates on the same principle as those used in the transfer of large quantities of L. P. gas, only in a reduced capacity. It may be used as a portable unit or may be permanently installed.

Available complete with power, hose and fittings ( $\frac{1}{4}$ ,  $\frac{1}{2}$ ,  $\frac{3}{4}$  explosive proof electric motor or Model 6 Briggs & Stratton engine). Compressor available singly for use with your own power and fittings. Relief valve is standard equipment, gauges optional. Capacity is 1.6 to 3.5 cu ft per minute. Base of compressor is 12 in. wide, 24 in. long.

D. H. Krug Co.

### 4. Midget Solenoid

A new series of midget solenoid valves for handling all types of gases and liquids has just been introduced by General Controls. These compact, new valves are available in many models for a variety of applications for control of fluids in the domestic, commercial, and industrial fields.



Aside from their small size, these new valves of the company's K-27, K-28, K-29 series have soft seat, tight shut-off construction and are multi-pose.

Among them are time delay valves, manual reset valves, 2-way on/off valves and 3-way valves. Individual valves are designed to handle gas, air, oil, water, as well as corrosive fluids. Aluminum, brass and stainless steel is used as body metal to suit the application. In stainless steel types, all internal parts also are steel to assure long life in the handling of corrosives.

General Controls Co.

## 5. Portable Parts Cabinet



General Industrial Co. announces the addition of new portable cabinets to their line of "See-Thru" small parts drawer cabinets.

These handy new cabinets are ideal for servicemen, repairmen, demonstrators and salesmen. Equipment, supplies and parts can be neatly filed in the plastic drawers and then conveniently carried to the job. Drawers have comfortable non-slip handles and the welded all-steel cabinet is rigidly constructed and tested to carry a 100-lb load safely. Front doors have padlock hasps. The steel backs of the cabinets have four key-holes for wall hanging.

The JC-32-SD has 24 plastic drawers, each 1 7/16 in. high, 2 3/4 in. wide and 5 7/8 in. deep and one large steel drawer. Dividers for the plastic drawers provide 72 adjustable compartments.

The cabinet is finished in silver-grey hammer finish and is equipped with rubber feet.

General Industrial Co.

## 6. Unit Heater



A gas-fired unit heater weighing only 31 lb and having a capacity of 25,000 Btu per hour input is being introduced by Modine Manufacturing Co. It delivers 337 cfm at a velocity of 515 ft per minute, giving it a heat throw of 28 ft at an 8-ft mounting height.

The unusually light weight of this unit, known as the Model U-25, is achieved through the use of a stainless steel burner and heat exchanger and the direct firing of the heat exchanger tubes, which permits the elimination of a combustion chamber.

Paralleling its light weight is the small size of the casing which has been held to a depth of 8 1/2 in., a width of 11 3/4 in. and a height of 17 1/2 in.

Modine Manufacturing Co.

## 7. Gas Dryer

A new gas dryer with automatic ignition and safety controls is now made by the Norge Division of Borg-Warner Corp.

Drying time is automatically controlled on the new model. Norge's "time-line" control is marked in five-

minute segments to simplify setting. All action stops and the pilot light and main burner go off at the end of the pre-selected period.

The model also features an automatic ignition system which eliminates the need for a constantly burning pilot light. When the control is turned on, a pilot ignitor coil is electrically energized to light the pilot burner. The pilot, in turn, heats a mercury-filled bulb connected to the pilot safety switch, which opens the solenoid valve in the main burner. As gas flows into the main burner it is ignited from the pilot flame.

Automatic safety controls protect the owner against damage to clothes or the unit itself. Drying operation stops if the gas supply is interrupted, or if temperature rises to 200° in the heating chamber or 140° in the lint duct.

Norge models use the temperature of 110° and the high rate of airflow of 150 cu ft a minute.

Norge Division,  
Borg-Warner Corp.

## 8. Soldering Torch



A new pistol-shaped torch for soldering, burning, sweating and other jobs, and designed for use with propane gas, is now in production by Velocity-Power Pool Co.

A squeeze of the trigger produces a controlled flame—a fine, pin-point



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or a full, 6-in. flame, as desired for any job—and the new torch saves substantial time and gas because of its instant-on, instant-off features.

Electricians, plumbers, roofers, farmers and other users can get as much as 50% more time from a tank of propane gas because the flame snaps out on release of the trigger, the manufacturers claims. Absence of lingering flame on shut-off also promotes safety, avoiding accidental fires and burns.

Pumping, priming, heating and waiting are eliminated through use of the new torch, known officially as the "Type P Propane Torch-O-Matic," because ignition is instant on squeeze of the trigger.

The new propane torch connects directly to the propane tank, without need for intermediate valve apparatus.

Velocity-Power Tool Co.

## 9. Gas Fire Alarm



unit rises above 136°, the valve opens automatically and the horn wails a warning of fire.

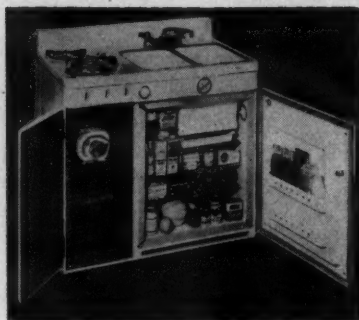
Although the unit is only 15 in. in length and weighs only 3 lb, it produces a piercing whistle of five to eight minutes duration which can be heard above industrial noise. Smaller units are made for home and store use.

Each Fyr-Larm cylinder nameplate provides explicit installation instructions.

Fyr-Larm Co. Inc.

## 10. "Complete Kitchen"

This one-piece combination for kitchen use consists of a cook stove, refrigerator and double sink. It is of particular interest to those having



limited space, as in small homes, motels, trailers and apartments. It is called the "General Chef."

There are three top burners for use with all gases and an oven with broiler. The oven has Robertshaw automatic temperature control and is well insulated from the refrigerator along-side.

The refrigerator is electric, sealed, self-oiling and has 6 cu ft of space. The freezing chamber holds nine ice cube trays or 12 standard frozen food packages.

The double sink consists of one-piece, porcelain finished top of heavy gauge steel. The faucet and all hardware are triple-chrome plated.

The single sink unit, without oven, comes as small as 27½ in. wide, or one can be had without any sink.

General Air Conditioning Corp.

## 11. Unvented Heater



"It hangs like a picture in 3 to 5 minutes" is one of the features of the new Quaker "Cool Wall" unvented gas heater. This new 25,000 Btu input heater has an exterior cabinet that is extra cool to the touch and may be painted to match or blend with any room color scheme. Standard finish is baked on silver-beige, with gold silicone trim.

Other advantages of this new heater are that no floor space is required, it creates no unlivable zone and furniture may be moved next to it without danger. There is no open flame.

Advanced "Air-Flow" design insures rapid removal of cool air from floor and fast output of warm air. It is ideal for both renters and home owners because it can be moved from one

room to another or from one home to another easily and quickly.

Special ribbed combustion chamber is porcelain enameled to insure against rust-out or burn-out. Unit is only 20 in. wide, 48 in. high and 6 in. deep. Safety shut-off and automatic controls are optional.

Quaker Manufacturing Co.

## 12. Stainless Steel Fryer

The new Super-Chef Diamond Model 14-SS features an all-stainless steel cabinet with stainless steel fryer pot. This one-piece fryer pot is an achievement in modern die drawing as the heavy 16-gauge pot is drawn from stainless sheet without welds, seams or corners for durability and cleaning ease.

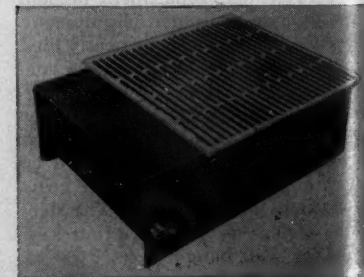


The manufacturer emphasizes that the cabinet is constructed entirely of solid stainless steel and that in addition to the exposed front and sides even the inside door liner, the floor, the back, the rear flueway and back-splash are constructed of solid 18-8 polished, stainless steel.

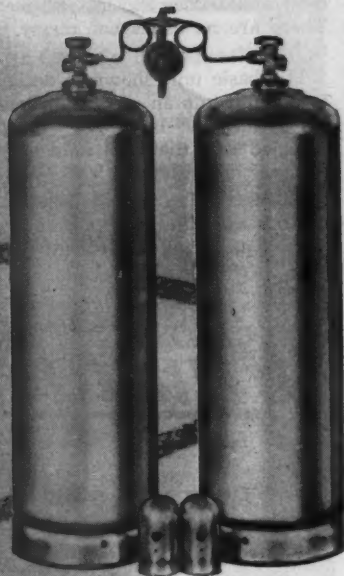
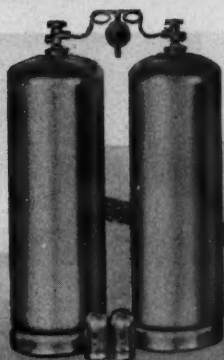
Other features of the Diamond model include a high output, long-life, cast iron, square burner at 65,000 Btu's for L. P. tank type gas; the patented "fat mizer" separate sediment chamber; dual drain valves, and the automatic overflow well.

Super-Chef Manufacturing Co.

## 13. Barbecue Broiler



Permanent coals of ceramic material are used in a newly developed gas outdoor barbecue broiler. Known as the "Lazy-Man" broiler because of its simplicity of operation, the unit uses either bottled or city gas and is ready to broil seconds after it is lighted.



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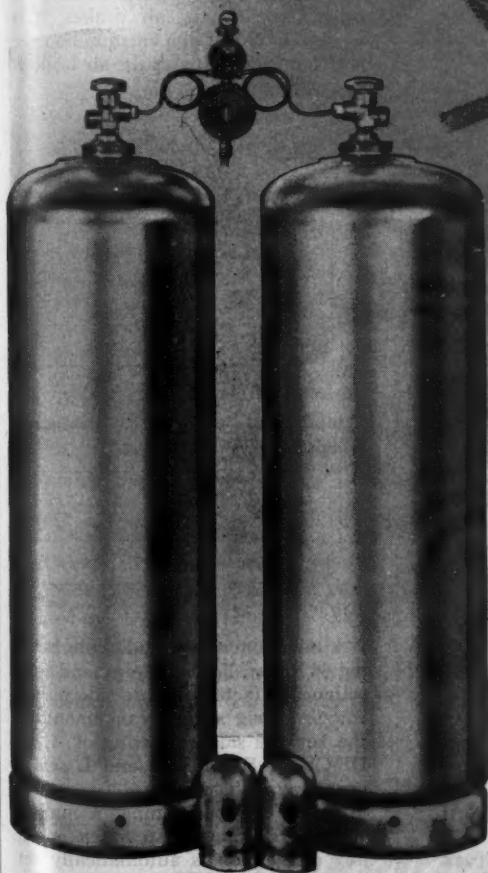
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The controlled, searing heat is as intense as charcoal and gives the same appearance and taste to meats. There are no ashes nor messy fuel to handle.

The basic unit shown is designed to be built into an outdoor fireplace. The same unit is available in a wheeled cart that will hold a 20-lb cylinder of bottled gas.

The Lazy-Man is large enough to broil two family size steaks or a dozen hamburgers at a time.

Chicago Combustion Co. Inc.

#### 14. Lock Valve

The installation of the meter brake lock valve to either booster or air braking system on a vehicle materially improves the safety factor of delivering liquid from a tank truck, in that when the delivery ticket is inserted in the meter and the handle turned one revolution to stamp the beginning reading, all foot brakes are automatically on a "full-on" position and remain so until the handle on the meter is turned a complete revo-



lution at the end of the delivery.

In addition, the meter brake lock eliminates the possibility of the vehicle traveling from one location to another with the delivery ticket inserted in the meter. This is assurance that the amount of gallons shown on the delivery ticket was actually delivered at one location.

For installing the meter brake lock on a vehicle using air brakes, it is necessary to install a vacuum booster which in turn actuates the air brakes.

Meltrotter Systems Inc.

# Mutual

## YOUR FIRST CHOICE

### butane-propane liquid vaporizer burners

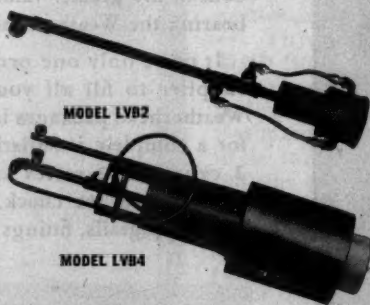


Look at  
these sales and profit  
possibilities!

- KILNS
- DRIERS
- ROAD OIL EQUIPMENT
- MELTING COMPOUNDS
- DEHYDRATION
- EVAPORATORS
- WELD BURNERS

MODEL LV86

Mutual burners are "fast movers" and good load builders, too. They are adaptable to dozens of medium and heavy duty industrial uses. Mutual design and construction make selling easy. These simple, foolproof Butane-Propane burners are self generating and utilize liquid direct from the tank. A needle valve adjustment instantly controls the flow of gas for best combustion mixtures. All Mutual Liquid Vaporizer Burners are compact, rugged working-tools with no moving parts. Mutual quality—known throughout the industry—assures top performance in the field, as repeat sales prove. Write for catalog and prices.



MODEL LV82

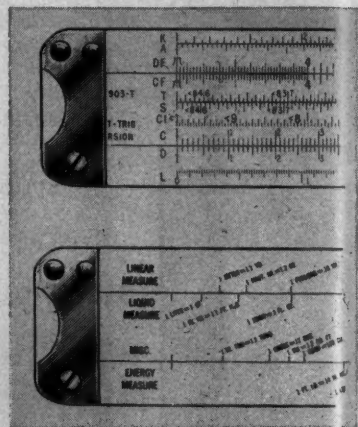
MODEL LV84

# Mutual

MUTUAL LIQUID GAS EQUIPMENT CO., Inc.  
3635 W. IMPERIAL HIGHWAY  
INGLEWOOD, CALIFORNIA

	MODEL LV82	MODEL LV84	MODEL LV86
Rated Consumption	3 gal./hr.	10 gal./hr.	45 gal./hr.
Rated Capacity	280,000 BTU/hr.	700,000 BTU/hr.	3,500,000 BTU/hr.
Size of burner head (I.D.)	2"	3"	6"
Overall length	25"	24"	36"
Weight	7#	30#	65#
Approximate shipping weight	8#	30#	80#

#### 15. Slide Rule

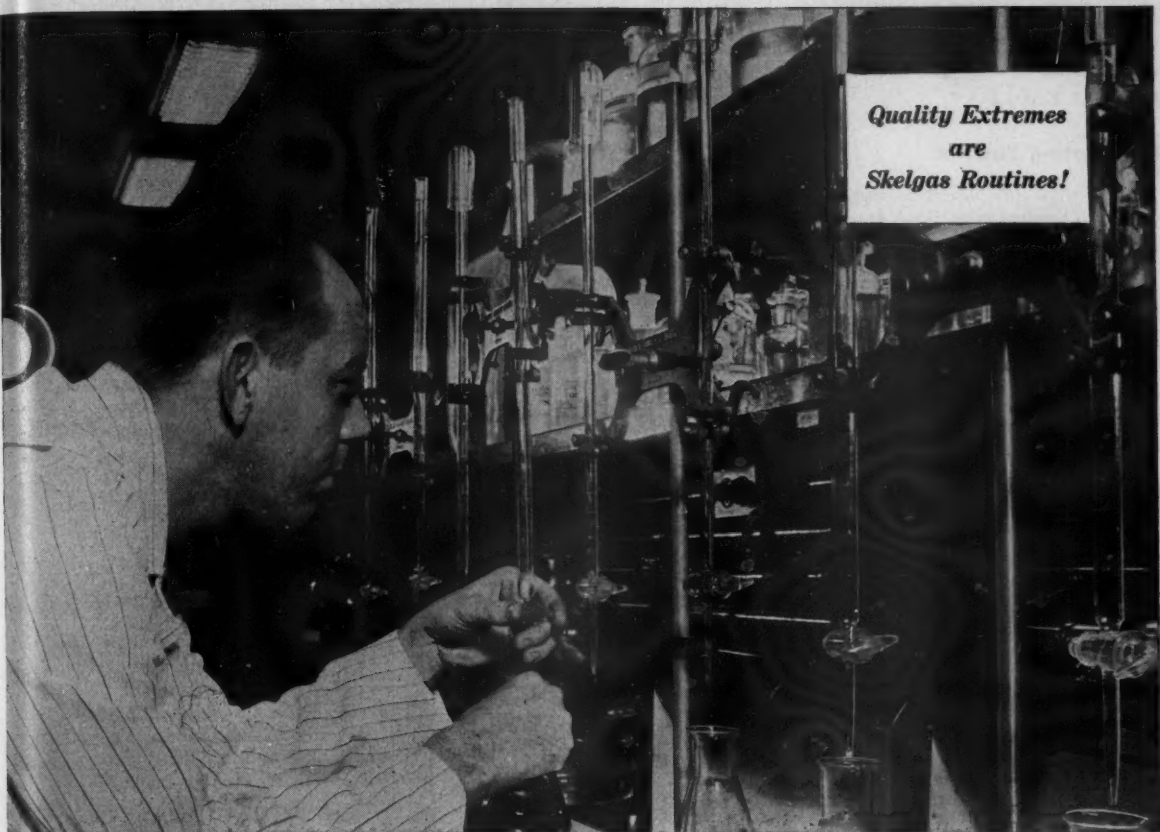


A new conversion slide rule bearing 64 linear, liquid, energy and miscellaneous factors on one side plus a complete trig scale arrangement on the reverse side consisting of A, K, DF-CF, T, S, CI, C-D and L scales is now available.

By merely "positioning" a conversion mark opposite an index mark, any conversion is automatically set and read on the C, D, CF or DF scales without moving the slider or further computation. The same automatic conversion principle is adaptable to any set of specialized conversion factors on either pocket-size or 10-in. rules for any line of work.

The new model 903-T single-setting conversion rule is made of light

*Quality Extremes  
are  
Skelgas Routines!*



## "DOUBTING THOMAS"

The hydrocarbons that enter into the processing of gases at the Skelgas plant can be called a lot of things—but no gas is called "Skelgas" until it satisfactorily passes and exceeds dozens of exacting quality tests.

At every step of the Skelgas manufacturing process, the gases are confronted by "Doubting Thomases" like the technician pictured here. Nothing is taken for granted. Armed with an astonishing array of foolproof scientific

instruments, Skelgas technicians check and double-check the physical and chemical qualities of Skelgas. Result: No chance for moisture in Skelgas. No chance of freezeups. No chance for impurities of any nature.

No wonder Skelgas is widely known as the purest and most efficient fuel that money can buy. No wonder Skelgas is easier to sell. No wonder Skelgas keeps your customers so well satisfied. Write for franchise facts!



Famous for quality, too, are Skelgas ranges, water heaters and other home and farm appliances in the complete Skelgas line. They mean profitable business for Skelgas dealers!



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Milwaukee, Wis. • St. Louis 17, Mo. • St. Paul 4, Minn. • Shreveport, La.

OCTOBER, 1954

97

weather-proof metal alloy, is 12 $\frac{1}{8}$  in. by 1 $\frac{1}{4}$  in. by 3/32 in. in size with white facing, and weighs 2 $\frac{3}{4}$  oz.

Pickett & Eckel Inc.

## 16. Heating Bulletin

How, why and when to use gas-fired unit heaters is outlined in a new bulletin prepared by the Reznor Manufacturing Co. now ready for free distribution.

Included in the handy, pocket-size 20-page booklet are hints on heater selection and installation, a schematic

diagram explaining how a gas unit heater works, a heating survey outline, instructions for estimating heat loss and computing gas line requirements and a summary of the advantages of gas unit heating.

Reznor, a pioneer in gas heater engineering since 1888, is the manufacturer of the world's largest-selling gas unit heater. Other units in the Reznor line include floor model room heaters, the PAC—a unit/central heater for use with or without ducts, and a duct furnace.

Reznor Manufacturing Co.

## 17. Suspended Models

Full color illustrations of typical Reznor installations highlight a new six-page bulletin issued by the Reznor Manufacturing Co. to help its dealers sell suspended gas unit heaters.

Other features of the colorful bulletin are a summary of the advantages of gas unit heating, a cutaway showing construction details, a special section of Reznor's venturi heat exchanger design, complete dimensions and specifications.

In addition to nine suspended models—25,000 to 250,000 Btu—the Reznor line includes console-styled floor models, the PAC—a unit central heater for use with or without ducts, and a duct furnace.

Reznor Manufacturing Co.

## 18. Signs and Markers

North Shore Nameplate Inc. has announced the addition of over 7500 new stock items used for pipe markers, container signs, chemical industry and maintenance and repair operations. Standard card size is 2 $\frac{1}{4}$  in. by 9 in. in various colors.

Identification tapes require no moistening, and are easily applied to round as well as flat surfaces. There is no effect from cold, humidity or vibration. Mounted on special white fibre backing cards, they are easily removed for instant application.

North Shore Nameplate Inc.

## 19. Heater Catalog

The Ohio Foundry & Manufacturing Co. announces the opening of its 108th year in the heating field with the release of its mid-year gas heater catalog No. 54. The new edition illustrates and describes 37 "Brilliant Fire" models in both vented and unvented classifications.

Styles include fan-forced winter air conditioners, console circulators, insulated "cool cabinet" models, gas-coal baskets, logs, radiant heaters and utility models.

Engineering features involve advanced combustion improvements, refined circulating techniques and new control systems. Particularly noteworthy are key refinements in burner efficiency for L. P. gases.

The Ohio Foundry also recently released a new Catalog No. 5W4, covering its expanded line of recessed wall heaters, both single-room and dual-room models.

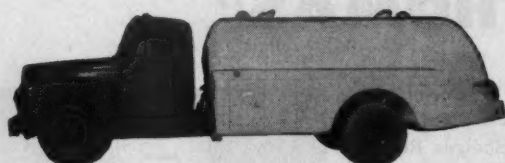
Ohio Foundry & Manufacturing Co.

# TRUCK DELIVERY or DOMESTIC STORAGE TANKS

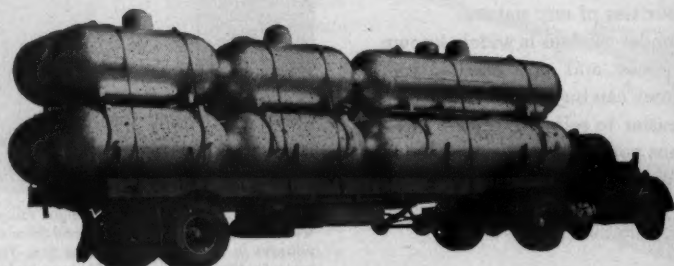
## Go Bagwell-General!

Engineer designed, built to specifications and field tested, you can depend upon Bagwell-General Truck or Domestic Storage Tanks.

★ ASME U69 to meet all Federal and State Requirements, our tanks are U/L Approved.



1250 to 1450 W.G. Full Streamlined



Domestic Tank for Pick-up, Trailerload or Carload

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TWIN OR  
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BARREL

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WEIGHT

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STREAMLINED





# Confidence...

Like the airline pilot who places complete confidence in an airport beacon to help guide him . . . you can place complete confidence in Beacon Petroleum to guide you through your busiest season. The finest quality Butane-Propane, delivered where needed, when needed has made Beacon a leader in the LPG field. Beacon Petroleum has the facilities to help *your* business grow . . . why not investigate?



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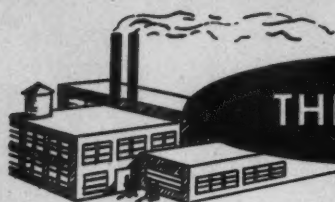
- the Finest LP Gas  
NGAA Butane-Propane
- Ample Storage  
to meet your every need
- Dependable Production  
to meet seasonal demands
- Prompt Shipment  
Tank car fleet assures delivery



# BEACON

PETROLEUM COMPANY

TULSA • HOUSTON



## THE TRADE



**MINNEAPOLIS - HONEYWELL REGULATOR CO.**—George Maves, manager of the Boston sales office of Minneapolis-Honeywell since 1948, has been promoted to the position of manager of the firm's Pacific region,

with headquarters in Los Angeles. He succeeds Gavin S. Younkin, who recently was named general sales manager for the company.

R. W. (Bob) Forster, who has been manager of the Buffalo, N. Y., sales

office, has been named to succeed Mr. Maves as Boston manager.

Mr. Maves, a veteran of 20 years' service with Honeywell, joined the firm in Minneapolis after attending the University of Minnesota. Before becoming branch manager at Boston, he served as regional manager in Denver.

Mr. Forster, a graduate of Massachusetts Institute of Technology, started his career with the company in the New York sales office in 1940 and managed the firm's New Jersey office before becoming manager at Buffalo.

## For L. P. Gas Bulk Storage Plants **MORE LEADING FIRMS ARE PICKING NELSON**



There are over 250 SYSTEM NELSON bulk plants for the storage of LP Gas and Anhydrous Ammonia located in 25 states. There's a reason for this ever-increasing preference for NELSON installations. Leading bulk plant operators have found that it pays to deal with an organization that has the experience, equipment and engineering skill necessary to do a complete, top quality job. NELSON installations are designed specifically to fit the individual requirements of each particular location. NELSON engineers supervise construction with careful attention to even the smallest detail. Why not take advantage of this extra service in working out your next bulk storage problem. Call or write for a meeting with one of our experienced sales engineers.



**EDWARD S. NELSON, Ltd.**  
Dept. L-1  
Clarksdale, Mississippi

THE LEADING NAME IN THE BULK STORAGE FIELD

**WORTHINGTON CORP.** — Hobart C. Ramsey, president of Worthington Corp., announces the election of Harold P. Mueller, president and treasurer of the Mueller Climatrol Division of Worthington, to the board of directors of Worthington Corp.

**H. P. Mueller**

Mr. Mueller will succeed Albert C. Bruce, who is retiring after 19 years of service on the board.

The election of Mr. Mueller follows the establishment of the Mueller Climatrol Division as a result of the acquisition by Worthington of the former L. J. Mueller Furnace Co. the past summer. The principal executives of Worthington Corp. and the Mueller Climatrol Division recently completed an organization meeting in Milwaukee.

Mr. Mueller is the grandson of the founder of the L. J. Mueller Furnace Co.

**UNITED PETROLEUM GAS CO.** — Greg L. Stephens has been appointed manager of the Houston office. Prior to his new employment with United, Mr. Stephens was with the Universal Petroleum Co. in Tulsa.

Mr. Stephens will manage the Houston division of United, reporting to the Tulsa regional office. The company's headquarters are in Minneapolis.

**GENERAL GAS CORP.** — Rawlston D. Phillips, president of General Gas Corp., Baton Rouge, announces the election of Dr. Ray L. Farabee, vice president of Delta Tank Manufacturing Co. Inc., and former professor of chemical and metallurgical engineering at Purdue and the University of Alabama, as a member of General Gas' board of directors.



By Truckload or Trainload—

#### TEN REASONS

why you get so much peace of mind with a United fuel contract:

1. Finest quality fuel.
2. Our own 3-mile-long fleet of tank cars; truck fleet available, too.
3. Twelve or more producing points in four states.
4. Competitive freight rates.
5. Automatic "keep-fill" service.
6. Guaranteed supply and delivery.
7. Exact odorization control.
8. Technical advice and service.
9. Prompt claims adjustment.
10. Speedy service on parts and equipment from our warehouse.

## We GUARANTEE to deliver your fuel on time, every time

Are you longer on customers than on L-P gas storage?  
Do you worry about getting caught short on fuel in a cold spell?

Have supplier strikes or shutdowns ever shut off bulk deliveries of fuel to you?

Get on the receiving end of a fuel contract with United, and all your worries are over! Nothing but a prolonged nationwide railroad strike could prevent our regular delivery of L-P Gas to you.

IT PAYS 10 WAYS TO DO BUSINESS WITH UNITED!

# UNITED PETROLEUM GAS COMPANY

806 ANDRUS BLDG. • MINNEAPOLIS, MINNESOTA

#### Sales Representatives:

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R. E. HAUGEN  
202 14th Street South, Marshall, Minnesota

C. H. KOCH  
3207 West Illinois, Midland, Texas  
D. A. LARSON  
330 Couch Avenue, Kirkwood, Missouri  
S. R. NAVICKAS  
41 West St. Albans Rd., Minneapolis 16, Minn.

W. A. STANGE  
231 Linden Drive, Centerville, Ohio  
F. S. VICTOR  
414 McKinley Bldg., Tulsa, Oklahoma  
G. L. STEPHENS  
1011 Electric Bldg., Houston, Texas



At the same time, Mr. Phillips announced that Arthur C. Rhyne, General Gas controller, was elected secretary of the Baton Rouge firm, and that Ernest L. Agerton, former assistant secretary, has been elected vice president in charge of operations.

Dr. Farabee continues in his post as vice president in charge of engineering, research, development and production for Delta, General Gas' major manufacturing subsidiary, which operates plants in Baton Rouge; Macon, Ga., and Beardstown, Ill. Dr. Farabee joined Delta Tank

last year after serving as vice president of the Central Foundry Co., of Tuscaloosa, Ala.

**AMERICAN METER CO.**—Bernard E. Gardner Jr. has been appointed sales engineer by American Meter Co. and assigned to the Atlanta district. He will serve his new territory out of the Charlotte, N. C., office of the company.

Mr. Gardner's previous business affiliations include service as a research and development engineer with Tide Water Oil Associates of California and as map draftsman

with British American Oil Co. of Dallas, Texas. He has recently completed the sales training course conducted by American Meter Co., and will take up his new duties immediately.

**ACF INDUSTRIES** — At a recent board meeting Charles J. Hardy Jr., who has been president of ACF since 1947, was elected chairman of the board to succeed John E. Rovensky, who announced his retirement some two months ago.

James F. Clark, who has been vice president in charge of finance since 1952, was elected president, succeeding Mr. Hardy Jr.



James F. Clark



Chas. J. Hardy Jr.

**MAGIC CHEF INC.**—A. M. Coventry has been named general credit manager, according to Clark P. Fiske, secretary-treasurer of the firm.

Mr. Coventry succeeds B. R. Tritton, who is retiring as assistant secretary and general credit manager after 37 years of continuous service.

An active member and director of the St. Louis Association of Credit Men, Mr. Coventry has been with the company since 1928. He has been credit manager since 1951, prior to which he was divisional credit manager for Magic Chef's New York office.

**ANCO MANUFACTURING & SUPPLY CO.**—Robert Blobaum, who has

been associated with the Omaha office of Anco Manufacturing & Supply Co. since March 1, 1953, has been named district manager of the company. Territory served from this office and warehouse includes what is

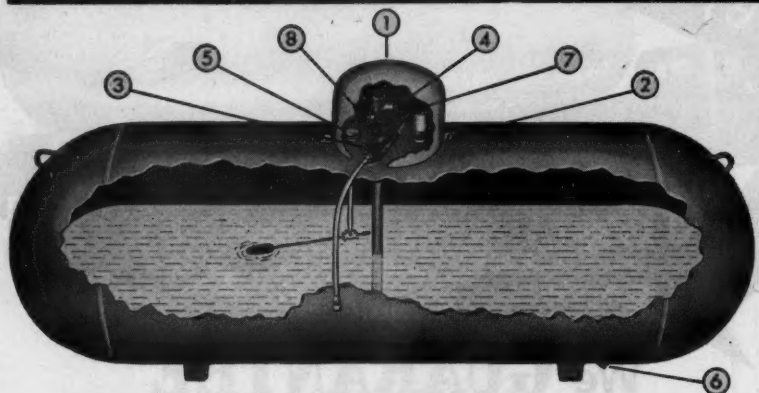


Robert Blobaum

known as the Great Plains area, embracing Nebraska, Iowa, part of Kansas, South Dakota and Minnesota.

Anco maintains another district office and warehouse at East St. Louis, Ill. The head office of the firm is located at Tulsa.

## Economy LP-GAS SYSTEMS



### Some of the many Features and Qualities of *Economy* Systems

- ① ONE PIECE STREAMLINE DOME!
- ② STURDY DETACHABLE HINGE!
- ③ LARGE ORFICE REGULATOR!
- ④ LIQUID TAKE-OFF, BUILT-IN EXCESS FLOW!
- ⑤ FLOAT GAUGE, REPLACEABLE SNAP-ON DIAL!
- ⑥ BOTTOM PLUG FOR LIQUID, OR CLEAN OUT!
- ⑦ LIQUID LEVEL OUTAGE GAUGE!
- ⑧ PRESSURE GAUGE OUTLET!

### SEE US BEFORE YOU BUY!

Economy Truck Tanks, Transports, Skid Tanks, Anhydrous Ammonia Tanks and all types of Steel Fabrications.

## VICKSBURG TANK COMPANY, INC.

409 LEE STREET

VICKSBURG, MISS.

# PREST-O-LITE

TRADE-MARK

## LP-Gas CYLINDERS

are built to  
make money  
for you . . .



Available in popular 20-lb., 40-lb., 60-lb. and 100-lb. sizes, with or without valves. Other styles can be made to order.

PREST-O-LITE Cylinders combine unsurpassed quality, low cost, and attractive appearance to satisfy the exact needs of LP-Gas users everywhere. Cylinders are rugged and sturdy for long, dependable service life. They're lightweight for easier handling. Factory testing is in excess of requirements to assure maxi-

mum safety and performance. And all PREST-O-LITE Cylinders are deep-drawn to extremely uniform wall thickness so you can be sure of exacting size, weight and capacity. Superior anti-rust coating protects the cylinder bottom and interior of footing from corrosion—a valuable safeguard at no extra cost! Durable aluminum enamel protects the cylinder finish indefinitely and reduces your repainting costs.

Your wisest, most economical investment in LP-Gas cylinders is in the PREST-O-LITE Brand. Write or 'phone your nearest LINDE Office today for complete information.

Data is deeply cut in large characters into an extra thick, wide flange on 60-lb. and 100-lb. cylinders (into valve protecting head ring of 20-lb. and 40-lb. sizes). Lettering remains easy to read throughout life of the cylinder.



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A Division of Union Carbide and Carbon Corporation

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"Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.



**WHIRLPOOL CORP.**—J. Paul Jones has been appointed director of engineering research and development for Whirlpool Corp. it is announced by President Elisha Gray.



**J. Paul Jones**  
division of AVCO Manufacturing

For the last seven years Mr. Jones has served in a like capacity with Bendix home appliance

Corp., South Bend, Ind. Prior to that he spent 10 years with International Detrola Corp., most recently as chief production manager of their Universal Cooler Division, Marion, Ohio.

**NORGE DIVISION** — Robert J. Runge has been appointed advertising manager of the Norge Division of Borg-Warner Corp., Chicago, R. C. Connell, director of sales, announces.

Mr. Runge joins Norge from a position as advertising and sales promotion manager of Thor Corp., Chicago. Previous to that he was sales promotion manager of the plumbing and

heating division of Crane Co.

Another appointment is that of Virgil C. Rice as director of manufacturing of the Norge Division. Mr. Rice, who will be in charge of all manufacturing, engineering, and research, replaces Stewart S. Battles, who has resigned.

Appointment of James Ruff to the research for the Norge Division of the Borg-Warner Corp., Chicago, is announced by R. C. Connell, director new position of director of marketing of sales.

The position was created because of the company's decision to place greater emphasis and dependence upon marketing research activities.

**WHIRLPOOL CORP.** — Charles A. Green has been appointed a regional sales manager for Whirlpool Corp., it was announced recently.

Mr. Green will supervise Whirlpool sales activities in Colorado and Texas.

**WHITE PRODUCTS CORP.** — Edward Lamb, president of Lamb Industries, recently announced the appointment of Robert Lareau as vice president in charge of operations of White Products Corp., a Lamb property. A. D. Vining was named to the newly created post of vice president in charge of sales.

White, manufacturers of White automatic water heaters, was purchased by Lamb a year ago.

**MASTER TANK AND WELDING CO.** — Walter L. Allen has joined Master Tank and Welding Co., Dallas, as traveling sales representative in Texas and New Mexico, according to Sam Weempe, partner and general manager of the firm.

Mr. Allen is a native Texan and is well known in the butane industry. He has been a butane tank salesman since the end of World War II. Mr. Allen will have his headquarters in Luling, Texas.

**SERVEL INC.** — Recent appointments in the organization include the following:

Vern C. Laurence, of Berwyn, Ill., has been appointed district sales manager for the St. Louis area, according to an announcement by Neal E. Schuman, field sales manager of the company's appliance division.

Mr. Laurence has been a dealer sales representative for the Servel factory owned distributing branch in Chicago for the past six years.

In his new job Mr. Laurence will assist Servel distributors in St. Louis, Des Moines, Springfield, Ill., and Peoria, Ill., in the promotion and sale of refrigerators, food freezers, room air conditioners, water heaters and

Do you really know what goes on inside your gas heater?

what you should know about gas heating

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**LP-GAS HEATING BUSINESS**

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## EYE-OPENERS as your DOOR-OPENERS

Now the prestige product in the gas venting field brings to your customers, the home-owners, an informative eye-opening explanation of **what** gas heating is all about ... **why** their gas heating system should be checked ... and **who** will perform this service free (answer: their Metalbestos dealer). It's a natural for building gas heating business and here are the tools to do it:

- a 16-page illustrated booklet that convinces the home-owner of the need for a correct, up-to-date gas heating system.
- dealer newspaper ads to hammer home the importance of having gas heating systems checked.
- dealer mailing pieces that offer your customers the Metalbestos booklet and your check-up services.

Contact your nearest Metalbestos jobber today about these door-opening eye-openers — yours without charge — or write to:

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WILLIAM WALLACE COMPANY • BELMONT, CALIF.

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More complete line

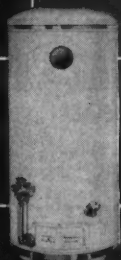
With John Wood, you can offer an automatic Gas water heater to meet every demand. There's a John Wood water heater for every water condition . . . GLASS-LINED or GALVANIZED, for every type of Gas, in a wide range of sizes and both table-top and vertical models. Prices? There's one for almost every pocketbook.



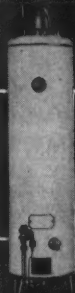
DE LUXE  
VERTICAL



DE LUXE TABLE-TOP



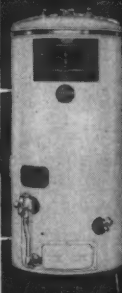
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Heater!"



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**promotion sales profits**

If you're already handling the complete JOHN WOOD line of automatic Gas water heaters, you know it's been a big year for sales—and profits! For your part in our biggest year ever, thanks! But if you're not cashing in on the top-profit market for John Wood water heaters, you owe it to yourself to find out all about the John Wood line right now. It's complete . . . lets you sell every prospect exactly the heater he needs for his home

or business. It's heavily promoted to your customers in leading national magazines . . . plus the help of a full assortment of impact-loaded, sales-making materials you can use yourself. Dependable, economical to own and operate, John Wood automatic water heaters SELL . . . and you profit.

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Finest glass-lined or galvanized  
water heater anywhere!

**JOHN WOOD COMPANY**

Heater & Tank Division

Conshohocken, Pa.

Chicago, Ill.

portable refrigerettes. He will make his headquarters in St. Louis.

G. O. Kuhen, former assistant air conditioning service manager at Evansville, has been promoted to the newly created position of technical assistant to the manager of the air conditioning division.

His promotion was announced by H. R. Nielsen, manager of the Servel air conditioning division.

Mr. Kuhen has been with Servel for nearly 25 years.

R. L. (Rudy) Kirse, of Palisades Park, N. J., was named assistant service manager of the air conditioning

division of Servel. Robert E. Davis is service manager.

Mr. Kirse, who was formerly a field service representative, will make his headquarters at the factory.

Before joining Servel last year, Mr. Kirse was supervisor in charge of all Gulf Oil Corp. air conditioning and commercial refrigeration installation and service in Venezuela.

**ROCKWELL MANUFACTURING CO.**—Former chief engineers of two Rockwell divisions have been promoted to key posts in two new central research and development de-

partments being established at the company's national headquarters offices in Pittsburgh.

Howard J. Evans, former chief engineer of the Pittsburgh Equitable Meter Division, has been promoted to chief engineer and manager of the Central gas products research and development department.

H. A. Altorfer, former chief engineer of the Nordstrom Valve Division, Oakland, Calif., has been named chief engineer and manager of the Central valve research and development department.

**WOLVERINE TUBE** — George W. Overstreet has been appointed sales representative in North and South Carolina and portions of Tennessee and Georgia, according to G. H. Tobelman, Eastern district sales manager for Wolverine Tube, Division of Calumet & Hecla, Inc.



G. W. Overstreet

Mr. Overstreet was formerly plant sales manager in the company's Decatur, Ala., mill.

**JOHN WOOD CO.** — J.B. Balmer, president of the John Wood Co., New York City, announces the election of Guy George Gabrielson as board chairman and an executive committee consisting of Mr. Gabrielson, Victor Mauck and J. B. Balmer.

**TRINITY STEEL CO. INC.** — Announcement has been made by C. J. Bender, president, Trinity Steel Co. Inc., Dallas, pioneer LPG tank fabricator, of the recent election of Ray L. Reedy to the position of vice president in charge of sales.

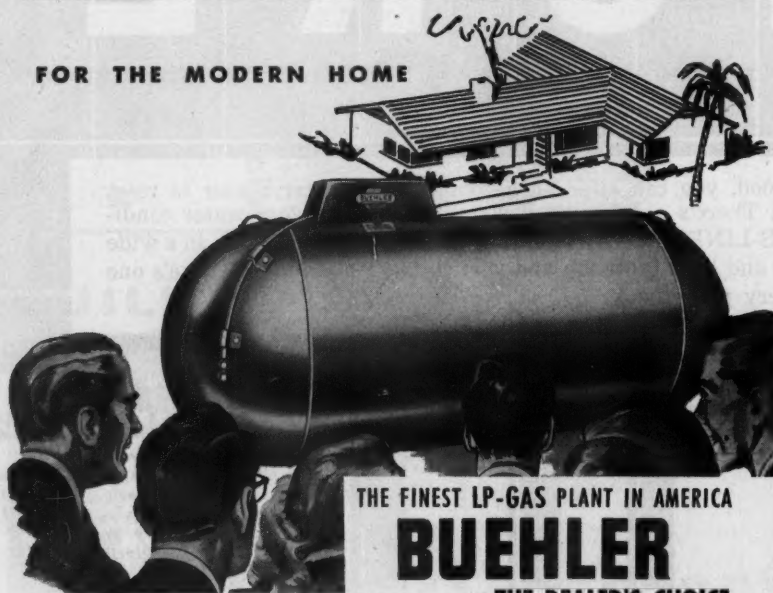


Ray L. Reedy

Mr. Reedy is well known throughout the industry, having had a part in many advance designs and improvements in the bulk truck tank field in recent years.

**NORRIS-THERMADOR** — William B. Burke has been appointed as Western cylinder sales representative, according to Rodney Mastick, manager of cylinder sales for Norris-Thermador Corp., Los Angeles. Mr. Burke has recently received his MBA degree from Stanford University Graduate School of Business.

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THE FINEST LP-GAS PLANT IN AMERICA  
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THE DEALER'S CHOICE

In this day, when quality and price go hand-in-hand, the dealer finds in BUEHLER LP-Gas plants the best buy on the market. Beauty, convenience, moisture-free, safety arrangements of fittings, long-lasting guard box—everything designed for customer preference.

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Built to BUEHLER standard of quality, a complete line of NH<sub>3</sub> applicator and storage tanks is available. Check with us for complete details. Special BUEHLER features of construction are incorporated on both trailer and wheel-type mountings. Bulk storage tanks up to 12,000 Gals. Code: ASME 250 or 265 W.P.



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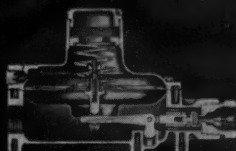
**FISHER GOVERNOR COMPANY • Marshalltown, Iowa**

WORLD LEADER IN RESEARCH FOR BETTER PRESSURE CONTROL

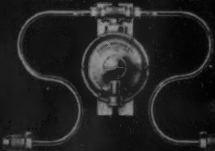
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Automatic two cylinder  
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**TYPE 912B**  
Cash and carry and  
trailer regulator

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*Since 1880*





## ASSOCIATION NEWS

### Twenty-ninth State Joins National LPGA

North Dakota is the 29th state to affiliate with the Liquefied Petroleum Gas Association under the integration plan, it was announced recently. The North Dakota association voted unanimously to integrate with LPGA at its recently annual meeting.

The newly elected board of directors met recently to formalize the integration of their state association and to develop an aggressive program for the group. Attending this meeting from the national group were R. H. Mahnke and John Kelderhouse. These men will assist the group in its association endeavors.

Plans were made for a series of local intrastate meetings to develop greater interest in the association and to present an educational program of interest to management and service personnel.

### Symposium on Testing Held in Missouri

A symposium on methods of testing liquefied petroleum gases was held recently at the Statler hotel in St. Louis, Mo. The meeting was jointly sponsored by ASTM committees D-2 on petroleum products and lubricants and D-3 on gaseous fuels, the Natural Gasoline Association of America and the California Natural Gasoline Association.

In addition to two full days of technical paper presentations there was a display of specialized L. P. gas testing equipment.

This was the first symposium of its kind, dealing strictly with testing liquefied petroleum gases.

### Chairmen for LPGA Committees Announced

W. R. Sidenfaden, LPGA president, has announced the appointment of the new standing committee chairmen for 1954-55.

The new chairman of the appliance specifications committee is W. J. Malchiodi, Protane Corp., Erie, Pa.; chairmanship of the distinguished



Members of the board of directors of the North Dakota LPGA are, left to right: John Kelderhouse, LPGA North Central district secretary; M. D. Satre; R. H. Mahnke, LPGA manager of district organizations; K. S. Backlund, secretary-treasurer N. D. LPGA; E. A. Hussey; Nieman Behm; Ralph Bender; and (not shown) Art Morken, vice president N. D. LPGA.

service award committee went to George Bach, Vapotane Corp., Kansas City, Kan.; the insurance committee will be headed by Robert E. Maloney, Calor Gas Co., San Francisco; George R. Benz, Phillips Petroleum Co., Bartlesville, Okla., was named chairman of the L. P. gas specifications committee.

Chairman of the market research committee is A. W. Gruer Jr., of Magic Chef Inc., St. Louis; heading the membership committee will be Edward J. Casper of Bemidji Bottlegas Co., Bemidji, Minn. The national affairs committee will be under the chairmanship of Mark Anton, Suburban Propane Gas Corp., Whippany, N. J.; publicity and advertising committee chairmanship goes to Walter A. Naumer, Pyrofax Gas Corp., New York; and the new chairman of the technical and standards committee is W. D. Cook, Suburban Propane Gas Corp., Whippany, N. J. Chairmanship of the transportation committee went to W. A. Baden, Anchor Petroleum Co., Tulsa.

Re-appointed chairman of the constitution and by-laws committee is K. R. D. Wolfe, Fisher Governor Co., Marshalltown, Iowa; W. A. Schuette, Hausgas Inc., Washington, Mo., was re-appointed chairman of the educational committee; re-appointed to head the finance committee was Charles O. Russell, Rapid-Thermogas Co., Des Moines, Iowa. Harry R. Thomas, Tuloma Gas Products Co., Tulsa, is chairman of the legislative committee; continuing as chairman of the organization committee is C. J. McAllister, Parlett Gas Co., Waldorf,

Md.; and R. H. Wherry, Gas Equipment Supply Co., Atlanta, will again head the safety committee.

### Charlevoix Scene of Recent Michigan Meet

One hundred twenty registered at the recent convention of the Michigan Liquefied Petroleum Gas Association at Charlevoix. The Charlevoix Beach hotel was the scene of the meeting.

Following the opening address by President Cal Wright, the group heard John Gregg of Metalbestos Co. discussing "Proper Venting of Gas Equipment"; John Kelderhouse talking about "Our Civilian Defense and Your L. P. gas Industry"; and Joe Rhodes discussing "Gas vs Electricity." Abner Baker of Surface Combustion Corp. showed a film called "Genii of the Flame."

Entertainment included mountain climbing via ski chair at the Boyne City ski lodge and a two day golf tournament.

### Plans Completed for Nevada Association Meet

Plans were completed recently for the Oct. 17-19 meeting of the Nevada Liquefied Petroleum Gas Association. The meeting will be held this year in Las Vegas with registration taking place in the lobby of the Hotel Last Frontier.

The meetings, to be held the second and third days of the convention, will take place in the Silver Slipper

# ***Douglas***

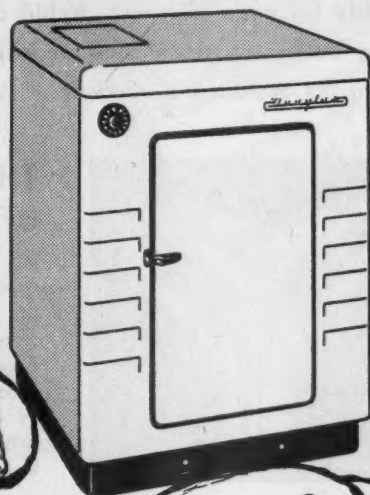
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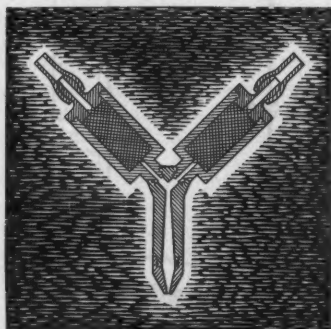
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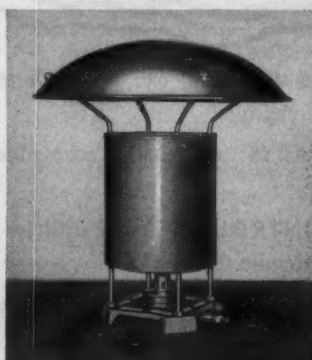


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ballroom on the grounds of the Hotel Last Frontier. Displays will be located in the south section of the ballroom, which is provided with disappearing partitions.

Entertainment will include a cocktail party at the Hotel El Rancho Vegas, with dinner and dancing to follow in the evening. The group will also have a "night on the town." There will be a chartered bus tour to Lake Mead and Hoover Dam. The golf course will be open to those who wish to take advantage of these facilities.

## Kentucky Plan Adopted by Association

The Kentucky Liquefied Petroleum Gas Association's finance committee has adopted a cooperative plan for advertising, public relations and home demonstration agents called the Kentucky plan. This plan was adopted to finance and promote an L. P. gas educational program in the state of Kentucky and to help speed the growth of the industry there.

The plan provides that each supplier of tanks and cylinders place a Kentucky LPGA approval label on each tank of 85- to 30,000-gal. capacity, including all bulk tanks for trucks, and bill the purchaser \$2 for each label attached.

The plan calls for a similar label to be placed on each cylinder from 20 to 420 lb and the purchaser is to be billed 15 cents for each of these labels attached.

A design to represent the Kentucky LPGA is to be drawn. Manufacturers are to purchase these stickers from the association in lots of 100.

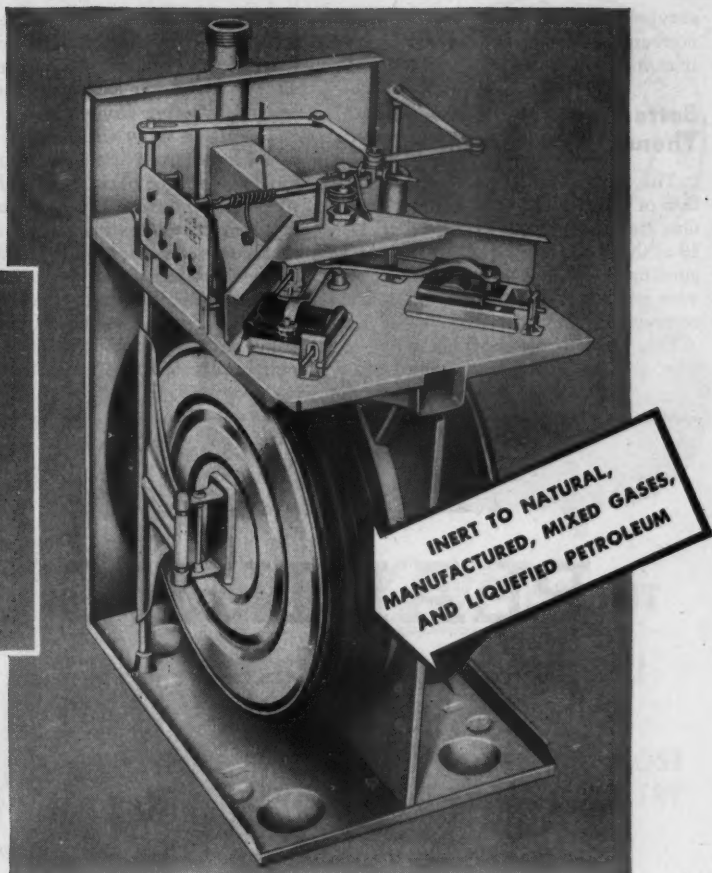
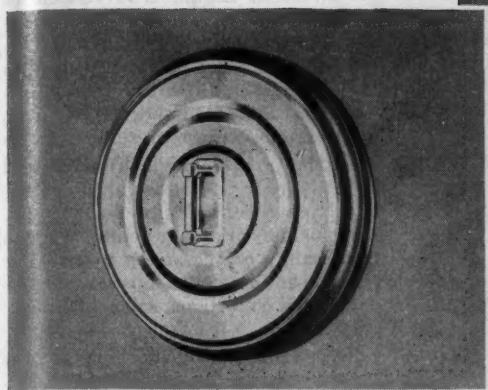
The only expense to the supplier, according to James Varnado, will be the cost of accounting and of mailing the money collected to the Kentucky association.

## GAMA Forms Conversion Burner Speaker Bureau

The newly formed conversion burner division of the Gas Appliance Manufacturers Association has announced establishment of a free speakers' bureau to meet the demand from builders, dealers and utilities for the latest information on developments in the house heating field.

Harry C. Gurney of Surface Combustion Corp., chairman of the division, said that, as a result of requests for information about conversion burners that have come into GAMA headquarters, 17 engineering, sales and service experts from 10 different companies have volunteered their





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that handles all types of gas services

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After testing many materials for this new diaphragm, they chose a grade of "Fairprene" coated fabric especially developed for them by Du Pont. They found Du Pont "Fairprene" resistant to all gases. "Fairprene" also demonstrated exceptional tear strength, burst strength and resistance to loss of coating when encountering the aromatic components in manufactured gases. The American Meter Co. obtains Du Pont "Fairprene" in sheets from which they fabricate their "Duramic" diaphragm. The exceptionally tough "Duramic" diaphragm is now used in their gas meters and is also sold by them as a replacement part.

"Fairprene" is preferred in many kinds of diaphragms

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services as speakers at home builders conventions, heating dealers meetings and gas industry get-togethers.

### **Better Business Know-How Theme of Ohio Meet**

The 1954 trade show and convention of the Ohio Liquefied Petroleum Gas Association will be held Oct. 17-19 at the Neil House in Columbus, according to Bill Everett, association vice president and chairman of the convention committee.

This year's trade show and convention will be designed to emphasize

the need for concentrated sales activities. The objective of the event is the stressing of products and service. This year's theme is "Better Business Through Better Know How."

The trade show will display every possible gas fired appliance appliance and each will be backed up with complete information on the sales and merchandising materials the manufacturer has available for the dealer.

Speakers at the convention will include C. T. Burg, vice president of Iron Fireman Manufacturing Co., Cleveland, talking about the salesman and salesmanship from the in-

dustry's point of view, while Dr. William B. Logan, educator from the College of Commerce, Ohio State University, will stress sales and management from an educator's view point.

### **Western Liquid Gas Completes Safety Training**

Western Liquid Gas Association has completed its series of safety training meetings throughout California and Nevada. Twenty meetings were held in all, with a total attendance of 556. One hundred forty-seven companies were represented.

The programs, which were aimed at safety in operations, included fundamentals of L. P. gas controls, fundamentals of proper venting, relation of safety of operations to insurance costs and miscellaneous programs on credits, collections, sales, and public relations.

The programs were designed to be of assistance to all personnel handling fuel.

It is the plan of the Western Liquid Gas Association to continue with future programs to bring information and experience to the L. P. gas industry.

### **Alabama Convention Tops Past Records**

Alabama LPGA held its annual convention at the Battle House, Mobile, recently with a registered attendance of 246, including the largest turnout of wives and guests in the history of the association.

The large support of the women was accomplished by offering an attractive social program for extra-curricular hours, special entertainment features to occupy the convention and business hours, and the substitution of a buffet dinner for the traditional Sunday night cocktail party. The well attended morning convention sessions were preceded by special breakfasts, paid for in the convention registration fee.

Convention sessions featured talks by F. R. Carpenter, president, United Petroleum Gas Co.; Rudy Mahnke, LPGA; Carl Abell, editor, BUTANE-PROPANE News; H. A. Goodwin, Bastian-Blessing Co.; and the "Gas vs Electricity" cooking demonstration put on by Fred Menke and associates, Harper-Wyman Co. Luncheon speakers were George Dennison, president, American National Bank, Mobile, and Dr. Carl Adkins, D.D., Mobile.

New officers elected at the business session were B. H. "Buster" Stall-

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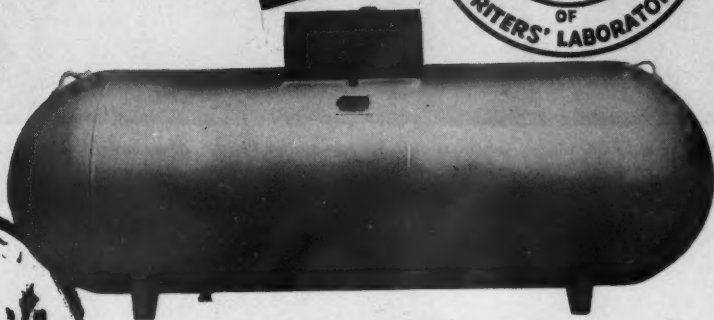
Because First Acceptance Corporation operates nationally, and is a pioneer in offering financial service to this industry, we are able to serve your immediate needs. Your inquiry will receive the prompt attention it merits.



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COMPETITIVE PRICES IN THE INDUSTRY  
FOR QUALITY CODE TANKS.**

Anywhere, McNamar can save you money by truck or by F.I.T. rail shipment. Whether it's a 115 gallon domestic system or a 6000 to 30,000 gallon storage tank, we can meet your requirements . . . for size . . . quality of workmanship . . . speed of delivery. So let's talk cents — make your next tank a McNamar.

- UL approved on all standard sizes.
- ASME 250 lb. working pressure meets and exceeds all requirements of U-69.
- Three liquid lines (Built in excess flow).
- 115 gallon to a 30,000 gallon storage.



# McNAMAR

## BOILER & TANK CO.

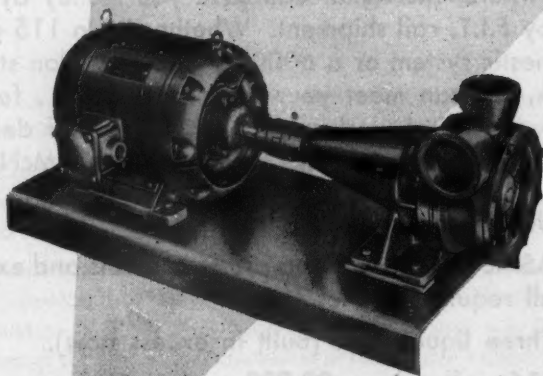
BOX 868 • TULSA, OKLAHOMA





Alabama LPGA elects, left to right: Buster Stallworth Jr., president; Mrs. Margaret Krueger, treasurer; George Allen Smith, vice president.

where there's  
**NO NOISE**  
there's  
**NO WEAR**



Corken Good Pumps are sweet running, long lived. Deliver maximum efficiency at any HP. Consume power only as required by load

**CORKEN'S inc.**  
208 E. Grand Oklahoma City, Okla. RE 6-6518  
EASTERN OFFICE: 916 PUTNAM AVE., PLAINFIELD, N. J. PHONE PL 7-1305  
DISTRIBUTORS IN PRINCIPAL CITIES

worth Jr., Monroeville, president; George Allen Smith, Gadsden, vice president; Mrs. Margaret Krueger, Foley, re-elected treasurer.

Awards of outstanding achievement were presented by the board of directors to retiring President Fred I. Palmer and to R. E. "Bob" Walker who served as director for the Mobile district. Silver services were presented to Palmer and to Mrs. Krueger by the dealers, and both the dealers and suppliers made gifts to Executive Secretary John Rooney.

A dance and floor show emceed by Max Fetty were the social attractions for Monday night. The convention closed Tuesday night with a banquet which featured the presentation of the gifts and awards, a talk by Earl Tucker, editor of the Thomasville, Ala., *Times*, and installation of officers.

### Double Barreled Program Offered by Texas Dealers

Now in its second year, the Butane Management Institute sponsored by the Texas Butane Dealers Association has been expanded to include courses for both management and employees. The first of this year's sessions was held Sept. 13, 14, 15 and 16 at the Caprock hotel in Lubbock.

Courses for employees were held separately from those for the industry "brass." Employee courses, which were open to management personnel, included record keeping, credit and collections, selling, and operating cost analysis. Management courses, which were not open to employees, covered how to conduct employee meetings, how to train an employee, human relations in business, and public speaking. The two groups met separately each morning, but came together each afternoon for instruction in safe practices, problem solving workshop, and business letter writing.

The Butane Management Institute has become one of the Texas Association's major activities, with annual sessions held both in Austin and the Plains area. It is a cooperative activity between the Texas Butane Dealers Association, the Extension Division of the University of Texas, and the Distribution Education Division of the Texas Education Agency. Cost of attendance at the Lubbock meeting was \$22.50 per person, including classroom work and tickets to the opening friendship hour and the closing banquet. W. W. Zwerschke, of Port Lavaca, is chairman of the Industry Training and Development committee of the association.

# 19 producing plants and storage wells...

...assuring Cities Service customers  
a continuous supply of consistently  
highest quality LP-Gas.



406 W. 34th Street  
Kansas City, Missouri

20 No. Wacker Drive  
Chicago, Illinois

500 Robert Street  
St. Paul, Minnesota

6611 Euclid Avenue  
Cleveland, Ohio

"All Around  
CHAMPS"

\*100 LB.  
PROPANE CAPACITY  
Approx. Tare Weight—70 lbs.

# Lee PROPANE CYLINDERS

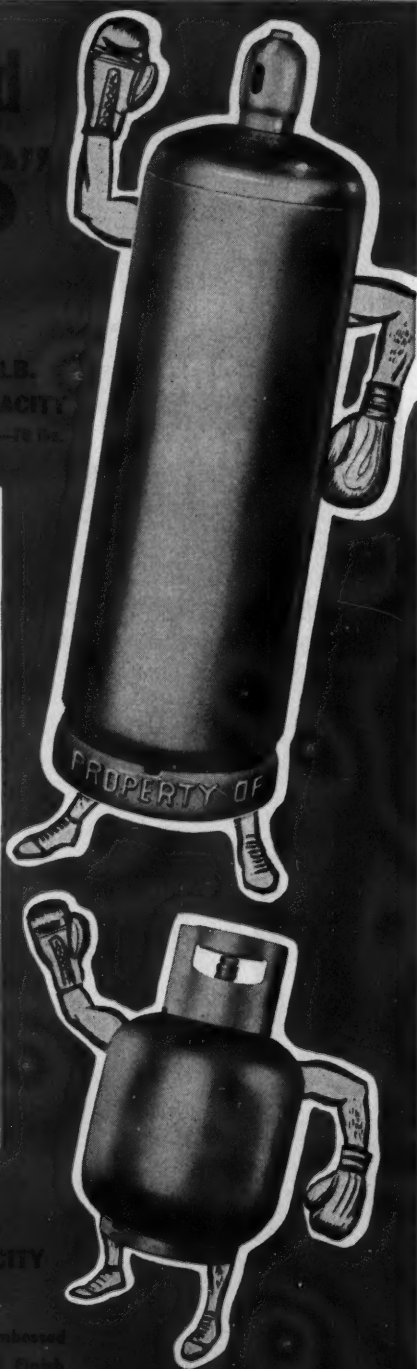
Exactly fabricated to  
ICC4BA240 specifica-  
tions of High-Strength  
Steel . . . Light in Weight  
but strong and durable  
. . . Lee Cylinders are  
truly CHAMPIONS of  
the industry.

20 LB.  
PROPANE CAPACITY

FEATURES . . . Data Plate—Embossed  
Exterior . . . High Quality Paint Finish

## STEEL COOPERAGE DIVISION

THE SERRICK CORPORATION  
4801 BELLEVUE • DETROIT 7, MICHIGAN



### CALENDAR

*All associations are invited to  
send in dates of their forth-  
coming meetings for this  
calendar.*

1954

### OCTOBER

- Oct. 11-13—AGA. Convention, At-  
lantic City, N. J.
- Oct. 17-19—Ohio LPGA. Annual con-  
vention, Neil House, Columbus.
- Oct. 17-19—Nevada LPGA. Conven-  
tion and trade show, Hotel Last  
Frontier, Las Vegas.
- Oct. 18-19—Kansas LPGA. Conven-  
tion, Hotel Broadview, Wichita.
- Oct. 18-24—National Safety Council.  
Meetings, Conrad Hilton hotel, Chi-  
cago.
- Oct. 24-26—Oklahoma LPGA. An-  
nal convention, Skirvin hotel, Okla-  
homa City.
- Oct. 29—Natural Gasoline Associ-  
ation of America. Southern regional  
meeting, Blackstone hotel, Tyler,  
Texas.
- Oct. 29—West Virginia LPGA. Con-  
vention, Clarksburg.

### NOVEMBER

- Nov. 4-5—Illinois LPGA. Fall con-  
vention, St. Nicholas Hotel, Spring-  
field.
- Nov. 8-11—American Petroleum In-  
stitute, Conrad Hilton hotel, Chi-  
cago.
- Nov. 15-17—American Standards As-  
sociation. Roosevelt hotel, New  
York.

### DECEMBER

- Dec. 6-7—Institute of Cooking and  
Heating Appliance Manufacturers.  
Annual convention, Netherland  
Plaza, Cincinnati, Ohio.

### JANUARY

1955

- Jan. 24-25—Michigan LPGA. Winter  
convention, Pantlind hotel, Grand  
Rapids.

BUTANE-PROPANE News



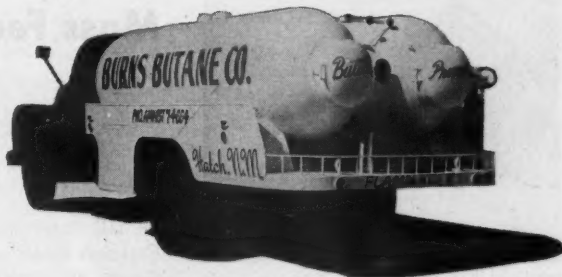
# AMERICAN *Better Bilt* DELIVERY TRUCKS

**LARGER PAY LOADS... LESS OPERATING COSTS... Mean Greater Profits for You!**

American engineered, perfectly balanced delivery truck units bring you — Lighter Weights — Easier Handling — More Gas Delivery — Safer Equipment.



★ **B31**—A very popular model with meter and storage boxes mounted on each side of truck and streamlined into the skirting. Motor fuel tank mounted in rear. Fittings are enclosed under a streamlined rear dome. Meter, if desired, is mounted in box on driver's side or may be mounted at the front of catwalk. Main valves are controlled from box on driver's side. Hose may be carried either in box or on catwalk. Hose reels may be mounted on all models if desired.



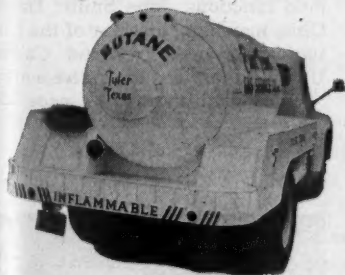
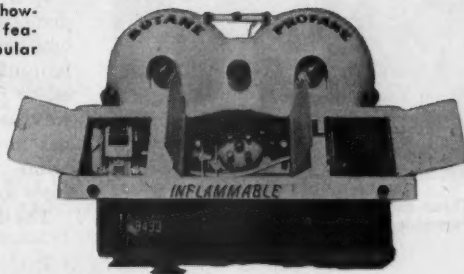
★ **B21**—America's most popular 1954 safety designed delivery truck. Motor fuel tank in rear. Meter may be installed in rear protected by small canopy or may be enclosed without destroying usefulness of design. Clutch and power take off controls are in rear. Two storage boxes are located in the rear and there is plenty of room for the hose. This unit was designed especially for safety of the driver and has been proven in service.

★ **N17**—A completely enclosed extra light weight compact unit designed with all controls, motor fuel tank, meter, hose reel, power take off and clutch controls all incorporated in rear streamlined cabinet maintaining perfect balance and symmetry of line. Rotary gauges are 1" in size, well protected.



★ **S83 Model**—The American single-barrel delivery unit in sizes from 1200 to 1600 water gallons incorporates all the many desirable features of the twin barrel trucks, including two storage compartments mounted on the rear, motor fuel tank on the off driver's side, plenty of room for hose and meter, and controls may be mounted in the rear if desired.

Rear view of N17 showing the desirable features of this popular model.



Delivery trucks made in sizes from 1250 to 2000 W.G.

**ALL MAKES OF NEW TRUCK CHASSIS AVAILABLE AT LOWEST PRICES**

**American Tank & Mfg. Co.**



PHONE Riverside 9183  
P.O. BOX 5525

**FINANCING AVAILABLE**  
Write for  
Information

2136 WEST COMMERCE, DALLAS, TEXAS

Also available at:

Jackson, Mississippi, P. O. Box 2563, Hi-way 80 East, Phone 3-8726

Littlefield, Texas, 306 N. Ripley, P.O. Box 341, Phone 228 MX

# Butane-Propane News



The first emergency set-up at the mass feeding demonstration in Lincoln Park, Chicago, entailed moving a commercial range to a pre-determined emergency feeding point and converting it to the use of L. P. gas. The range was delivered at approximately 9:20 a.m.



Three servicemen leveled the range and assembled burners and parts by 9:26 a.m.



At 9:27 a.m. a truck delivered two L. P. gas cylinders. At 9:30 the gas was hooked up.

## Mass Feeding Demonstration

## Held in Chicago

THE International Stewards and Caterers Union, meeting in Chicago, staged an emergency public mass feeding demonstration in Lincoln Park recently.

The demonstration covered all phases of emergency feeding, including chlorination of drinking water, sanitary procedures, and the techniques of constructing outdoor cook-in facilities by using bricks, rubble, mud mortar and other materials that would be available in the wake of an atomic attack.

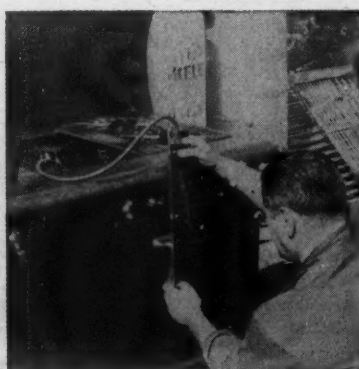
A group from the LPG industry demonstrated the rapidity and ease with which modern gas burning restaurant equipment could be converted to use LPG. Also demonstrated was the feasibility of using large L. P. gas torches to take the place of or ignite wood and other scavenger fuels in an emergency.

The demonstration was directed by

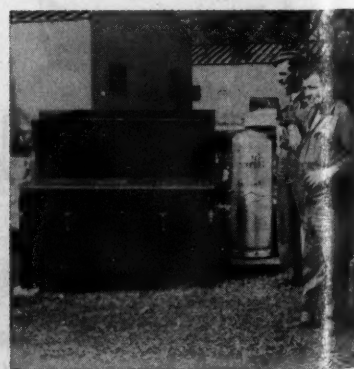
Frank Washam of the Chicago school system. Although activities at the site did not commence until 9:30 a.m., a complete luncheon-dinner was served to over 100 people by noon.

A wire recording of the proceedings covering the use of L. P. gas in an emergency was made by Howard D. White, executive vice president, LPGA, for a California delegation. Mr. White's running commentary through various phases of the demonstration was recorded for use in planning procedures for future functions of this type on the West Coast.

John E. Kelderhouse, North Central District secretary, supervised L. P. gas participation in the demonstration. Chris Neely, staff engineer, LPGA, acted as coordinator of the field functions. John Smith, Dayton, Ohio, managing director of the International Stewards and Caterers Union, supervised the entire activity. (Additional pictures on page 120)



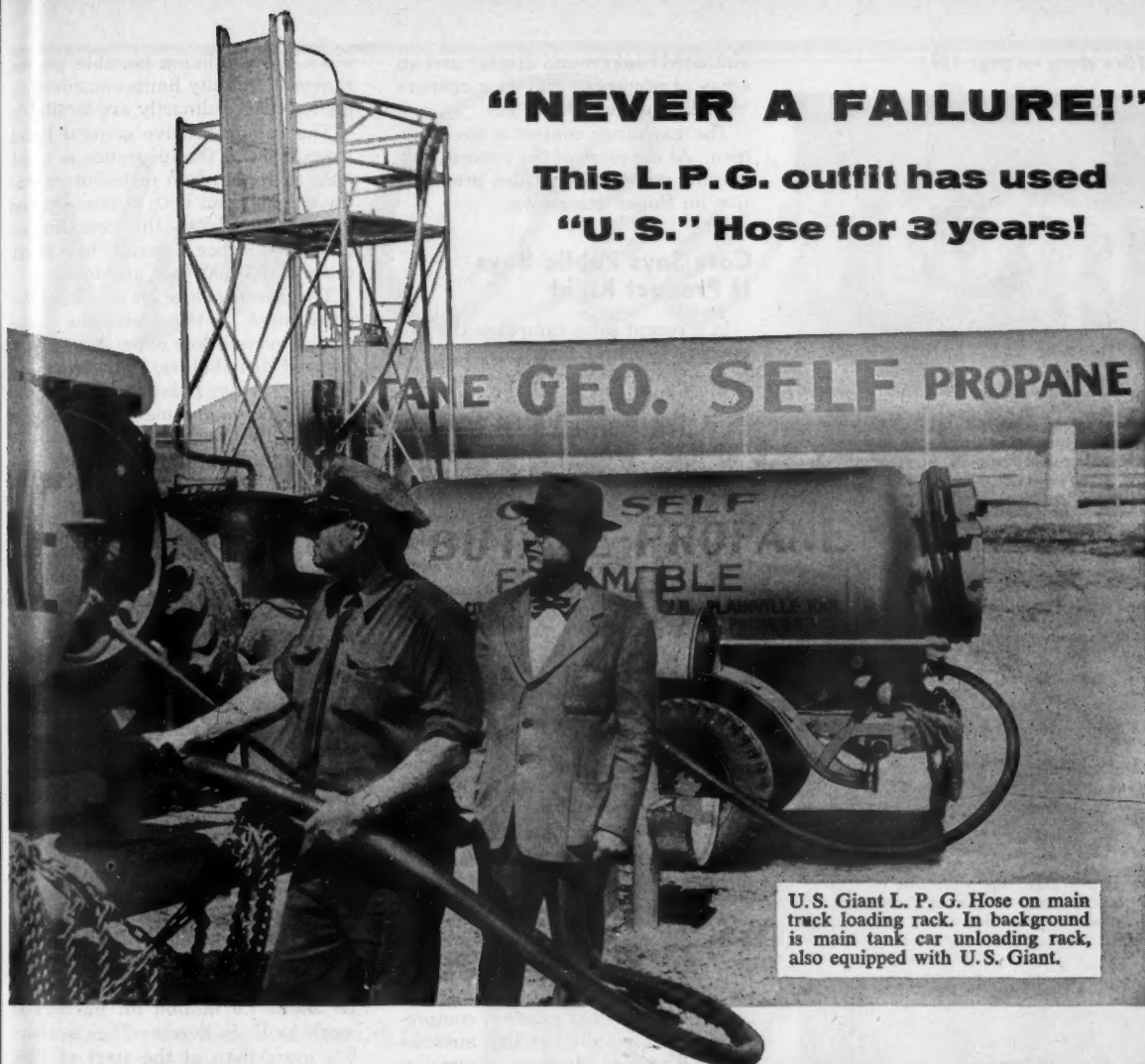
The gas pressure was adjusted at 9:31 a.m.



Work was completed and range temperature up to 350° approximately 25 minutes after the set-up was begun.

## "NEVER A FAILURE!"

This L.P.G. outfit has used  
"U. S." Hose for 3 years!



U. S. Giant L. P. G. Hose on main truck loading rack. In background is main tank car unloading rack, also equipped with U. S. Giant.

Used on all 12 trucks—on main tank car unloading rack—on main truck loading rack

The George Self Butane Company of Ponca City, Okla., says that the U. S. Giant® L. P. G. Hose never seems to wear out. Despite brutal use day in and day out for 3 years and more, every U. S. Giant Hose on all 12 trucks, as well as on racks, is still delivering good service.

A special lightweight quality yarn construction gives U. S. Giant extreme flexibility with great strength. The tube is specially compounded to resist L.P.G.'s permeating action. A specially-designed cover eliminates blistering. There is a complete size range from 1" to 3" with burst pressures far above safety standards of any state. U. S. Giant L. P. G. Hose is obtainable from any of our selected distributors, or any of the 27 "U. S." District Sales Offices, or write address below.

*"U. S." Research perfects it...*

*"U. S." Production builds it...*

*U. S. Industry depends on it*



**UNITED STATES RUBBER COMPANY**  
MECHANICAL GOODS DIVISION • ROCKEFELLER CENTER, NEW YORK 20, N. Y.

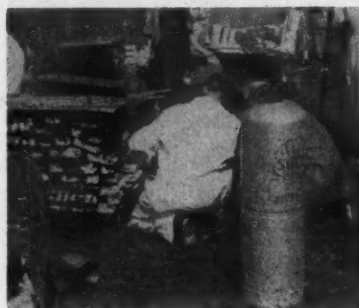
Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes  
Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting



(See story on page 118)



Work on the second set-up at another pre-designated point in Lincoln Park began about 9 a.m. with eight people and one supervisor. Project consisted of constructing an emergency stove of bricks, mortar and rubble.



At 10:30 a.m. the oven was completed. Materials used in construction of the stove were those that would be available in the wake of an attack.



Wood fuel was ignited by means of a 250,000 Btu L. P. gas torch, fueled by a 100-lb cylinder. Elapsed time for this set-up was approximately two and one-half hours.

## Roper Announces Plans To Stimulate Sales

To increase sales George D. Roper Corp. has announced its "Old Stove Round-Up" campaign and the "Score More" gas range national sales contest.

The "Round-Up" package, which is sent to dealers, includes seven newspaper ads, an attractive folder, a newsprint broadside, a set of four colorful pennants, cowboy neckerchiefs, price tags, radio "spots," an

animated background display and an array of premiums and door openers including a steak knife set.

The gas range contest is for salesmen. At the close of the contest, registrants must write a sales presentation on Roper gas ranges.

## Cote Says Public Buys If Product Right

In a recent sales campaign the Suburban Propane Gas Corp., Whippany, N. J., demonstrated that the public will buy if the product is right. A. H. Cote, general sales manager, announced that one of the most expensive gas ranges, because of newly developed, exclusive features, was the top seller.

Two automobiles, two diamond rings, and 13 wrist watches were awarded to salesmen and dealers in nine of the 10 states which participated in the sales event.

## Sid Richardson Introduces Insurance Plan

The Sid Richardson Gasoline Co. of Fort Worth has introduced what the company believes to be the first plan utilizing American insurance companies exclusively to provide insurance at a cost based on the experiences of individual L. P. gas distributors.

Customers of Sid Richardson are now being offered a complete liability insurance program including comprehensive general liability, comprehensive automobile liability, automobile physical damage insurance, workmen's compensation, dealer's comprehensive L. P. gas liability, fire extended coverage, and vandalism and malicious mischief insurance on bulk plant properties.

Through one master policy the Richardson company is able to provide the insurance at lower over-all premium cost. The insurance pro-

vides the maximum possible protection with liability limits considerably higher than ordinarily are available.

The comprehensive general liability portion of the insurance is available to Richardson distributors and their dealers on both a primary and excess basis with the combination giving insurance coverage to a maximum of \$300,000 per accident.

The plan provides for possible later adjustment of the premiums based on the over-all loss experience of the insured distributors, thus making greater savings possible. Richardson is guaranteeing a maximum rate to its distributors.

All phases of the insurance program are being made available on a pay-as-you-go premium basis, thus eliminating the necessity of making large premium payments in advance.

## Home Heating Oil May Show Price Rise

Home heating oil may show some price rises in the months to come. Last year prices of light fuel oil, including the household variety, dropped in November after the main heating season began. Oil men predict that this fall lower stocks and higher demand may push prices the other way.

Unlike weight stocks of gasoline and heavy fuel oil burned by industry, supplies of light oil are slightly below those of a year ago. Oil men expect that by Jan. 1, 1955, there will be about 7.6 million oil burners at work in U. S. homes. This is about 8% more than at the start of 1953.

A demand is foreseen for all light heating oils, including diesel fuel, in the last quarter of 1954 and the first quarter of 1955 at an average of 2.5 million bbl a day, some 13% above the year before. Because of producing capacity and quantity of tankers there will be no fuel oil shortage, however.



This truck, recently sold to Propane Gas Co., of Mt. Joy, Iowa, by Pasley Manufacturing & Distributing Co. of Kansas City, Mo., is now one of a fleet of seven propane-fueled trucks owned by Propane Gas. The company, with storage facilities for 50,000-gal. of L. P. gas, serves farm accounts and industrial users.

# NEW Peerless



## *The New* STANDARD OF EXCELLENCE IN *Gas* UNIT HEATERS

A new concept in Unit Heaters—*new* inside and out. Stimulating styling that sells... plus more engineering achievements that surpass all others. Efficiency and rugged construction for the toughest heating task.

Top flight quality to suit even the most conservative buyer has established the name — Peerless — that has been counted on for dependability for 70 years.

**Styled for Beauty  
Built for Duty**



**FAN AND  
BLOWER TYPES**

**FIVE SIZES**

**IN EACH TYPE**

**60,000 BTU — 80,000 BTU**

**100,000 BTU — 150,000 BTU & 200,000 BTU**

**SEE YOUR DISTRIBUTOR  
TODAY OR WRITE US**

**PEERLESS MANUFACTURING CORP., — LOUISVILLE 10, KENTUCKY**

## Rheem Fire Engine Attracts Crowds

A shiny little 1921 Model-T Ford fire engine, which Rheem Manufacturing Co. brought out of retirement from a Missouri farm, is becoming a familiar sight throughout the company's midwest heating equipment sales area.

As a rolling billboard for the company's furnaces, the reconditioned Model-T is drawing many curious people along highways and streets, and in front of dealer establishments in the Central States.



This 1921 Model-T Ford fire engine, refurbished by Rheem Manufacturing Co., is becoming a familiar sight throughout the company's midwest heating equipment sales territory. "Old Faithful" is displayed in front of Butler Heating & Sheet Metal Co. in Butler, Wis.

"Old Faithful" has been completely reconditioned by Rheem. Heating equipment displays have taken the place of the original pumping equipment and hose reels.

## Southern Tech. Gas Course Graduates Woman Student

The first and only woman student in the gas fuel technology course, Marian Hung-yin Tsai from Formosa, graduated recently from Southern Technical Institute in Chamblee, Ga. Miss Tsai graduated with honors.

After distinguishing herself with a fine scholastic record in electrical engineering at the National Yin-size University in China, Miss Tsai was given an all-expense scholarship to Southern Technical Institute by members of the board of directors of the national LPGA.

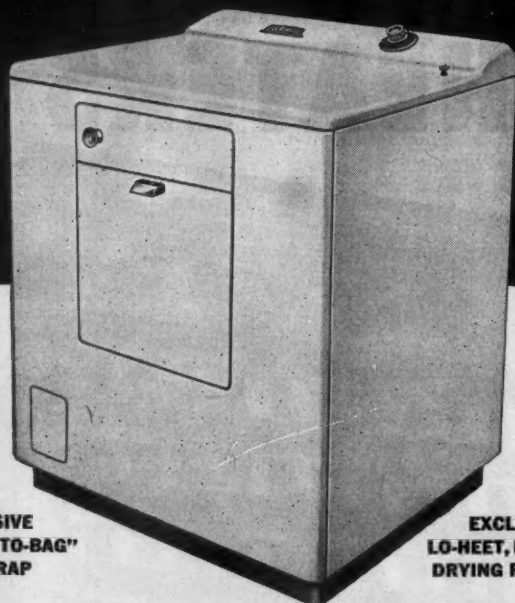
## National Safety Council To Meet in Chicago

Ned H. Dearborn, president of the National Safety Council, will be the keynote speaker at the petroleum sessions of the 42nd National Safety Congress and Exposition in Chicago, Oct. 18-22.

The opening petroleum meeting will be held on Monday. Specialized groups — manufacturing, marketing, and exploration and drilling — will hold separate sessions on Tuesday. The pipeline and production groups will have sessions the third day, while a general session will follow on Thursday on "How the Oil Industry's Fires Occur and Methods for Combatting Them."

The 1954 exposition with its 238 display booths will be a large and comprehensive display of accident prevention equipment.

## HERE'S CALORIC'S NEW LOW-PRICED, VALUE-PACKED AUTOMATIC GAS CLOTHES DRYER



EXCLUSIVE  
NYLON "SIFTO-BAG"  
LINT TRAP

EXCLUSIVE  
LO-HEET, HI-BREEZE  
DRYING PRINCIPLE

Here's the gas clothes dryer that offers prospects more dryer for less money than any other dryer on the market. It's built with all these outstanding features: Lo-Heet, Hi-Breeze economy drying principle, automatic operation, high level air intake, sturdy drop

door, Sifto-Bag lint trap, electric ignition, Nupon finish, two ways to exhaust moisture and many other features that are making the Caloric name famous in the gas dryer field. Ask for complete details of this new, low-priced gas dryer with the high-quality features.

EXCLUSIVELY FOR GAS

# CALORIC

CALORIC STOVE CORPORATION, TOPTON, PA.  
RANGES • DRYERS • DISPOSERS • BUILT-IN UNITS

SEND IN THIS COUPON TO DEPT. BP, CALORIC STOVE CORPORATION, TOPTON, PA.

Please send me full information on the Caloric gas dryer.

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_



## ANOTHER WAY YOU SAVE WITH FORD TRIPLE ECONOMY



New Ford F-600 does heavy-duty hauling at light-duty cost. Up to 16,000 lbs. GVW, 28,000 lbs. GCW. Choice of gas-saving, Low-Friction Power King V-8's, 130- and 138-h.p.

## New driver comfort cuts trucking costs!



Deluxe Cab shown, extra cost.

**New Driverized Cabs** cut fatigue! Big, curved, one-piece windshield for better visibility. Exclusive Ford seat shock snubbers to level the ride. New non-sag springs. New, free-breathing woven plastic upholstery that lasts longer, gives year-round comfort.

"Cut your speed after dark."

Helping the driver do a better job saves money by saving valuable truck time. What's more, driver comfort is an incentive for safety and for better vehicle care that prolongs truck life, cuts maintenance costs.

Only a Ford Truck gives you full benefit of these savings. For only Ford has the *Driverized Cab*, most comfortable of truck cabs, with its time-saving controls. For complete information, see your Ford Dealer, or write: Ford Division, Ford Motor Co., Dept. T-64, Box 658, Dearborn, Mich.

### SAVE WITH ALL THREE!

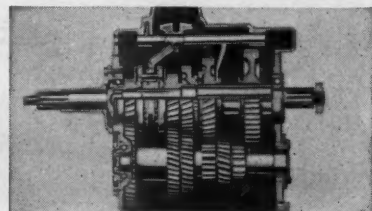
1. Gas-Saving Power!
2. Driver-Saving Ease!
3. Money-Saving Capacities!

And . . .

Ford Trucks last longer, too!



Electric-shift 2-speed axle has faster, more positive shift action than vacuum type. Convenient button control on gearshift lever. Extra cost. Single-speed axle is standard.



Synchro-Silent transmission for shifting ease. Four-speed standard, 5-speed direct (shown) or overdrive at extra cost.

## FORD TRIPLE ECONOMY TRUCKS

## Blythe Butane Moves To New Building

Open house for public inspection was held recently by Blythe Butane, Blythe, Calif. The firm, established in 1925, has moved to its new brick and redwood building located at the west city limits.

The building, which is a combination office and display room, has 800 sq ft of floor space. Located back of the building is the firm's 32,000-gal. propane storage tank and bottling dock.

Blythe Butane is one of Blythe's



Blythe Butane in Blythe, Calif., recently held open house for public inspection of its new brick and redwood building located at the west city limits.

pioneer businesses, founded 29 years ago by G. L. McBride with six 60-lb butane bottles. At that time there were only three butane appliances in the area.

The business expanded and additional cylinders and accounts were added. In 1945 Blythe Butane had three small storage tanks with a total capacity of 550 gal. and a bulk delivery truck with a 400-gal. capacity.

In 1946 Garnet W. McBride became a partner with his father and the business was expanded further. The company now consists of two "town plants" which are operated as public utilities under the name of Palo Verde Gas Co. and Blythe Butane. All accounts serviced by the company use the equipment supplied by Blythe Butane under a rental agreement.

In addition to the owners the company now employs three delivery men and a bookkeeper.

## West to Be Served by New Wholesale Company

Control Equipment Co. of Salt Lake City has been organized to wholesale all leading makes of heating controls and regulator equipment to L. P. dealers operating in the West. The company was founded by Alfred Christiansen, formerly with General Controls Co., and Willis Peterson Jr., formerly with W. L. Peterson Co.

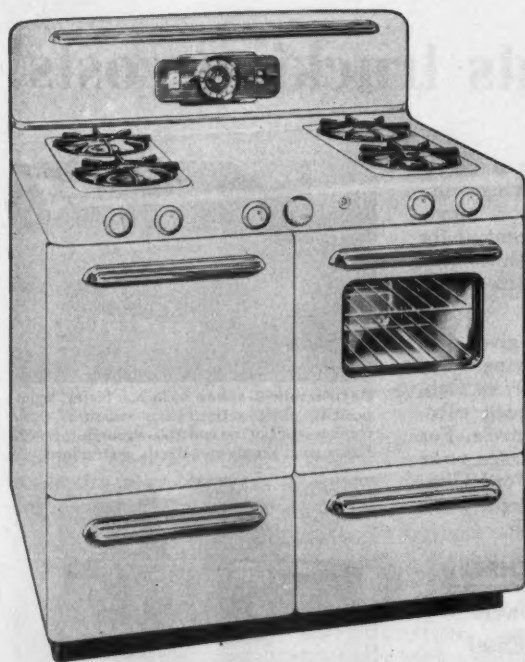
The company promises immediate service on all standard controls from its Salt Lake City warehouse.

## National Council to Promote Water Heaters

Urging dealers to tie in their local efforts with the national campaign, James E. Pew, president of the National Council for LP-Gas Promotion, has announced that the L. P. gas water heater will be the featured appliance in advertising to be released this fall by the LP-Gas Information Service.

Stressing the speed, economy, dependability and "round-the-clock convenience" of L. P. gas water heating, the fall ads will be carried in four national farm magazines, 31 state and regional farm publications, and several national magazines.

# Why any woman will buy Enterprise the range that delivers more cooking satisfaction per dollar!



JUST WHAT do most women want in a gas range? A recent survey shows that the minute timer, oven light and window, cook-top light, divided cook-top, and easy-to-clean broiler are most-wanted features.

WHAT DOES SHE GET with Enterprise? **All these features**, plus appliance outlet, oversize oven with non-tilt racks, waist-high broiler, additional low broiler, life-time top burners, vitreous rustproof porcelain throughout, Titanium porcelain on all outside panels.

POINT OUT these Enterprise features to any woman. Then show her the same features on "big name" ranges costing much more. Chances are, she'll buy Enterprise . . . the range that gives her more cooking satisfaction per dollar than any other!



WRITE TODAY FOR FULL INFORMATION

Serving a value-conscious America for nearly 100 years

**PHILLIPS & BUTTORFF MANUFACTURING COMPANY**  
NASHVILLE, TENNESSEE

## COLUMBIAN Full-Skirted Delivery Trucks

Backed by 60 years' tank-building experience. Pump mounted with direct-driven power take-off. Engineered to your state regulations. Built for speedy transfer. Pictured is 1600-gallon custom made unit. Curbside or rear-mounted controls.



# COLUMBIAN L-P

**Delivery Trucks • Semi-Trailers**

**Storage Tanks • Domestic Systems**

**Anhydrous Ammonia Tanks**

### COLUMBIAN Custom Built Semi-Trailer

To your order, single barrel or double. Greatest strength with lightest weight for a payload that PAYS! 4725-gallon single barrel transport, right.



### COLUMBIAN Bulk Storage

Long service life assures you maximum economy. Sizes to meet every need. ASME code construction throughout. Single or multiple installations. At left, dealer tanks up to 6000 gallons capacity.

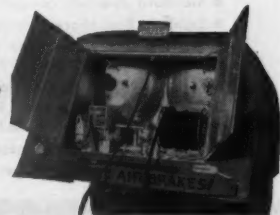


### Anhydrous Ammonia

Anhydrous Ammonia tanks up to 6000 water gallons. For application, transportation and storage. Fittings protected by heavy shield. An ever-growing, profitable side line for you!

### COLUMBIAN Twin-Barrel

For delivery or transport, note the functional location of controls, hose reel, metering equipment. Designed to cut delivery time, increase safety... no waste motions. All sizes to meet your specifications.



### COLUMBIAN Domestic Systems

ASME construction, in all sizes. Quality materials and workmanship throughout. Fittings conveniently grouped and protected by sturdy weather cap.

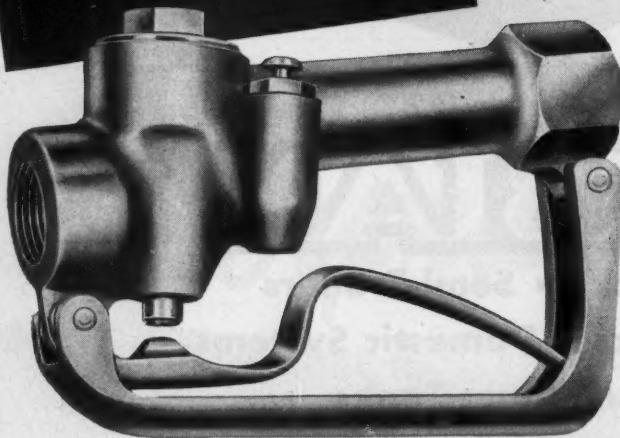
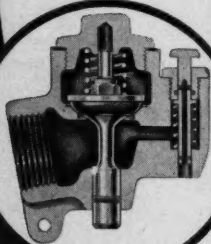


**WRITE TODAY for FREE, Completely Illustrated Literature!**

**COLUMBIAN STEEL TANK CO., Box 4048-C, Kansas City, Mo.**



# Okadee HOSE NOZZLE for Dispensing LP GAS



**APPROVED**  
for LP GAS SERVICE

● Here is the *safe*, compact hose nozzle for dispensing LP gas from bulk delivery trucks and stationary dispensing units. Check these features—never before available in *any* hose nozzle or valve approved for LP gas service by Underwriters' Laboratories—

- Standard one-inch connection can be adapted to fit all types of tank fittings.
- Excellent flow characteristics for fast loading.
- Self-closing loading valve as shown above; or available with hold-open latch (latch not UL approved).
- Push-button, self-closing bleed valve . . . positioned for safe, easy operation.
- Resilient synthetic rubber loading valve seat . . . still bubble-tight after more than 1,000,000 test cycles!
- No packing adjustment necessary with O-ring seals.
- Bleeds only 3.2 cubic inches of product after delivery, when equipped with short adapter.
- Large enough for comfortable, strong grip, yet small in overall dimensions: 8-7/8" long, with adapter; 5-13/16" deep; 2-9/16" wide at bleed valve.

Write today for full data and prices on this new hose nozzle!

SEE THIS HOSE NOZZLE IN BOOTHS 182 and 183, National Liquid Petroleum Gas Association Convention, Conrad Hilton Hotel, Chicago, May 9th through May 12th.

**Okadee COMPANY**

332 E South Michigan Ave. • Chicago 4, Ill.



## E. G. Howick Named Suburban Propane Officer

Eugene G. Howick of West Orange has been elected assistant secretary of the Suburban Propane Gas Corp., Whippany, N. J. As an officer of the corporation he will also continue in his capacity as assistant general manager.



E. G. Howick

Mr. Howick has been associated with the L. P. gas industry for more than 25 years. Starting as a research engineer with the Phillips Petroleum Co., he went to Suburban as a district manager when that company purchased Phillips' Eastern L. P. gas distribution in 1945. He was later promoted to assistant general manager.

## Norman Regional Managers Hold Sales Meeting

Russell G. Dawley, sales manager of Norman Products Co., welcomed Norman regional managers to a sales meeting at the company's headquarters in Columbus, Ohio, recently. The five-day meeting was held to discuss Norman's sales and marketing plans for the coming year.

## Maytag Building Warehouse in Iowa

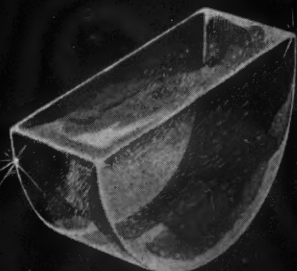
Maytag Co. is constructing a new warehouse in Newton, Iowa, comprising 200,000 sq ft of floor space. The new one-story windowless structure will provide storage for 30,000 finished Maytag appliances.

The building will also serve as a central point for shipping mixed loads of appliances by both truck and rail, providing better service to dealers. Stocks of all Maytag appliances will be warehoused in the new building.

## Honeywell Sets Up Dealer Training Program

Establishment of a nationwide network of training aid libraries as part of a program to help dealers, wholesalers and builders better understand the operation of automatic temperature regulating devices is announced by the heating controls division of Minneapolis-Honeywell Regulator.

K. L. Wilson, division head, said the 24 U. S. and two Canadian training aid centers would provide com-



## KEYSTONE OF THE ALL GAS KITCHEN

This "ice cube" (we call it an IceCircle) is made by the world's only refrigerator that makes ice cubes without trays...and puts them in a basket automatically! A Servel exclusive!

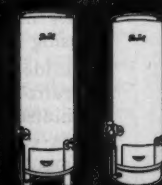
The Servel Gas Automatic Ice-Maker Refrigerator represents the greatest refrigerator advance in 30 years! And it is this very same Servel Gas Refrigerator with its no moving parts freezing system, that is the keystone to the All Gas Kitchen. It represents a steady

base gas load every day of the year. Yet it is but one of Servel's gas using products. There's the complete line of automatic gas water heaters and the Servel Wonderair "all-year" gas air conditioner that raises your summer load to a profitable level!

Truly the Servel Gas Refrigerator you sell today will work for you for years...and will pave the way for the use of other gas appliances in the kitchen and in the home!



Gas Refrigerator. 3 appliances in 1... refrigerator, freezer, and automatic ice-maker!



Automatic Gas Water Heater. A quality line second to none in the industry. 20 to 75 gal. cap.



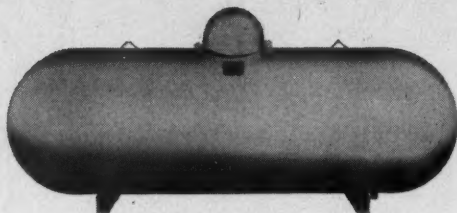
"All-Year" Gas Air Conditioners. One compact unit heats and cools the entire home the year round!

# Servel

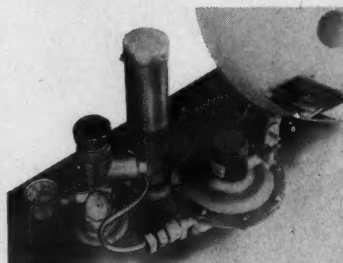
The name to watch for great advances in  
**REFRIGERATION and AIR CONDITIONING**  
Servel Inc., Dept. BP 10, Evansville 20, Indiana  
In Canada: Servel (Canada) Ltd.,  
548 King St. W., Toronto, Ontario

## LOOKING FOR A BETTER LPG SYSTEM?

### It's FLINT For Quality Construction



### It's FLINT For Quality Control Fittings



The relative merits of any LPG system are determined by two factors: construction quality and fittings. FLINT, long the leader in highest quality steel tank construction, now offers the finest in fittings, too. The new FLINT control fittings are designed for greater convenience in installing and filling; greater dependability in use; easier replacement. Protected by the heavy gauge steel dome shield and mounted on FLINT's easy-handling tank, these fittings make FLINT LPG systems an unequalled buy — Easier for you to sell.

Tanks are constructed in accordance with ASME code for 250 lbs. psi working pressure, and tested to 375 lbs. psi. Meet all state requirements. Six sizes, from 120 to 1,000 gallons. Also available in 6,000, 8,000, 10,000, 12,000, 18,000 and 30,000 gallons for bulk storage.

**BUILT BETTER . . . TO SELL BETTER**

## FLINT STEEL CORPORATION

MEMPHIS, TENNESSEE

TULSA, OKLAHOMA

## ACE HOSE REELS



### for Butane or Propane

• **SPRING HOSE REEL** — ACE HOSE REELS save time, save money. Engineered to handle up to 50' of 1" material the ACE SPRING OPERATED HOSE REEL assures satisfactory performance. All pipe fittings are heavy duty steel and a Chiksan ball bearing swing joint is a component part of reel.

**ACE HOSE REEL CO. 5466 Alhambra Ave., Los Angeles 32, Calif.**

pany sales engineers with visual aid materials which could be used in meetings with customers for the announcement of new Honeywell products or discussion of installation, service and sales problems.

Each center will be provided with Vu-Graph presentation kits on eight different types of heating controls. Demonstration boards will also be provided on which engineers can simulate typical service and installation complaints or demonstrate the operation of new devices.

The libraries will be in Cleveland, Cincinnati, Detroit, Pittsburgh, New York, Union (N. J.), Boston, Syracuse, Hartford, Philadelphia, Baltimore, Washington, Chicago, Indianapolis, Milwaukee, St. Louis, Denver, Portland (Ore.), Minneapolis, Los Angeles, San Francisco, Atlanta, Dallas, Kansas City, and Toronto and Calgary in Canada.

### Sunbeam Appoints New Advertising Agency

Sunbeam Air Conditioner Division of American Radiator & Standard Sanitary Corp. has appointed Ellington & Co. Inc. to handle its advertising. The appointment will be effective Jan. 3, 1955.

### Central Heating Shipments Reflect Building Level

Reflecting the continued high level of home construction and modernization throughout the nation, shipments of gas operated central heating equipment increased by 8% during the first seven months of this year over the same period of 1953, according to the Gas Appliance Manufacturers Association.

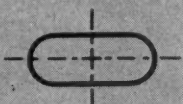
Shipments of automatic gas water heaters for the same period showed an increase of .9% over the same period of last year.

### Officials Say 1.4 Million New Homes Possible in '55

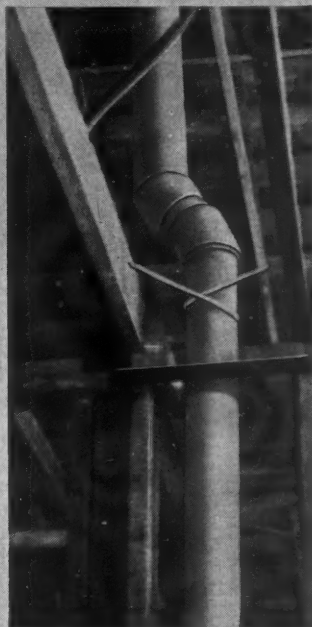
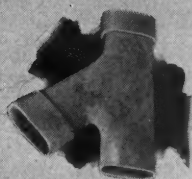
Under the easy payment terms of the Housing Act of 1954, officials believe the nation may add 1.2 million to 1.4 million new dwellings to its housing supply in 1955.

Builders' organizations believe the liberalized terms for Federal Housing Administration mortgage insurance—less cash down, smaller monthly payments, and mortgages stretching over 30 years—can bring home ownership within reach of millions of low income families. If so, the present housing boom may turn into an even bigger boom in 1955.

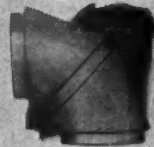
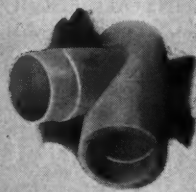




**OVAL PIPE  
AND  
FITTINGS**



**ROUND PIPE  
AND  
FITTINGS**



# This full TRANSITE<sup>®</sup> line makes easy-to-install, efficient domestic gas venting jobs

**... Economical!**  
**... Approved!**  
**... Safe!**

TRANSITE gas vent pipes and fittings are furnished in both round and oval styles. They include Type B for a wide range of appliances and Type B-W for recessed wall heaters. They make an all Transite passageway available to vent all types of domestic gas heaters with any type of house construction.

Transite Gas Vent Pipe, a Johns-

Manville asbestos-cement product, is accepted throughout the industry as a standard for safe, efficient venting. Millions and millions of feet have been installed year after year since it first came on the market more than twenty years ago.

Designed and engineered for its job, this asbestos-cement pipe is the only vent pipe continuously listed by Underwriters' Laboratories, Inc. since 1932. Transite resists heat, resists corrosion, is easy to handle on the job.

For further information, please write Johns-Manville, Box 60, New York 16, N. Y.



**INCLUDING RECESSED  
WALL HEATERS**



The Transite B-W Gas Vent is available with oval bell for connection to oval pipe extending through roof. Also with built-in, oval-to-round adaptor when such extensions are made with round pipe.



## Johns-Manville TRANSITE GAS VENT PIPES

## the **AUTOMATIC** **5,000**

Designed for **WINTER** living comfort

**HAS EVERYTHING . . . MOST  
OUTSTANDING HEATMAKER  
OF CENTURY! EASIEST TO  
INSTALL, SERVICE. FINGERTIP  
CONTROL, AUTOMATIC.  
THRIFTYWISE ON FUEL. SI-  
LENT OPERATION, ANY GAS.**

### Insulated **'COOL CABINET'**

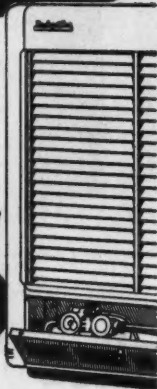
Means it's cooler to touch, protects baby hands  
on furnishings, and more heat to living zone

**MODEL NO. 5000.  
WINTER AIR CONDITIONER**

**HEATS  
CIRCULATES  
HUMIDIFIES  
FILTERS**

*automatically*  
**FOR  
ALL  
GASES**

• ROOM OR APARTMENT



### **TRAVELS HEAT FARTHER FASTER**

- **FAN-FORCED** circulation for balanced heat, floor to ceiling, A.S.A. approved, all gases, high altitudes.
- **FULLY AUTOMATIC.** Safety Pilot, thermostatic Temperature Control and Fan Switch. (Manual Summer Switch.)
- **FAST-THROT** heating section (burner to flue) 100% welded, no odor, sweating.
- **EASY-IRON** combustion chamber header insures long-life service. One-piece, cast burner has raised ports (non-clog), "hot-clock" air shutter.
- **MULTI-TUBE** Exchanger assures maximum heat extraction, exposes vast "wiping surface" to fan-action.
- **GIANT FAN** and low-level delivery provide gentle yet penetrating heat flow; super-quiet, minus cyclonic gusts.
- **PORCELAIN ENAMEL** humidifier, removable filter and all-weather draft diverter built-in.
- **INFRA-RED** baked enamel finish is lustrous, durable, easily cleaned . . . Opalescent Beige, Ivory grille, Gold-Bronze trim.

**QUIET • CLEAN • ODORLESS**



WRITE, WIRE, PHONE  
FOR CATALOG • PRICES • NEAREST DISTRIBUTOR



Quality  
HEATING EQUIPMENT  
SINCE 1945

THE OHIO FOUNDRY & MFG. CO.  
STEUBENVILLE, OHIO



Trinity Steel's new lowboy trailer, which will handle two storage tanks at once, has helped solve the company's delivery problems.

### **Trinity Lowboy Trailer Solves Delivery Problems**

In answer to the growing demand for small storage tanks, Trinity Steel Co. Inc., Dallas, has solved delivery problems through the use of a new Trinity designed and fabricated lowboy trailer, which will handle two 6000 wg, 60-in. diameter propane storage tanks simultaneously.

"Deliveries have been expedited and LPG dealers have realized a freight saving.

This unit has been approved by highway departments in most states.

### **Two L. P. gas Dealers Join New Orleans Division**

Gulf Refining Co. recently added its first two L. P. gas dealers in its New Orleans division. When the company announced its Gultane, George R. Hopps of Newport, Ark., and L. E. Carmichael of Searcy, Ark.,

became interested in the L. P. gas business.

After study and investigation, these two men decided that the LPG business would be a profitable venture for them, so they each signed a contract with Gulf Refining Co.

The problems of plant installation were solved for the two men by Edward S. Nelson of Clarksdale, Miss. Two identical installations were made consisting of a 30,000-gal. storage tank complete with tank car and transport unloading facilities and a modern bottle filling dock.

### **AGA Issues 1955 Sales Promotion Plans**

The second edition of the American Gas Association's annual "year-ahead" promotion and advertising plan book was issued to association members recently.

The new book features the timing, themes, preliminary formats and ad-



George R. Hopps of Newport, Ark., recently began his L. P. gas business with a 30,000-gal. storage tank complete with tank car and transport unloading facilities.



A newcomer to the L. P. gas business, L. E. Carmichael of Searcy, Ark., became interested in LPG when Gulf Refining Co. announced its new fuel.

# The Pioneer Profit Maker



OVER 7000 GALLONS ★ ASME-NB 265# W.P.



## Thirty Dollars a Day for You!

Net Cash Utilizing the Famous  
"LOADSHIFTER" Exclusive With "Pioneer"

Makes your trailer adaptable to any tractor enabling  
you to pick up every available gallon of payload.

*Write For Additional Information.*

*Liberal Terms Available.*



"EVERYTHING IN LPG AND ANHYDROUS AMMONIA"

### The Pasley Mfg. & Dist. Co.

601 East 11th St., Kansas City, Missouri • Telephone Victor 2369



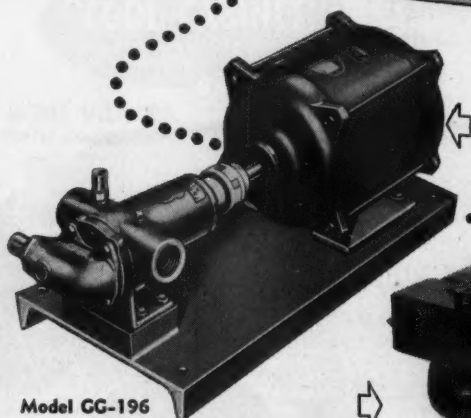
# VIKING'S LP-GAS PUMP LINE IS COMPLETE

Motor and engine driven bulk plant and truck mounting units. 8-17-28-38-70-90 G.P.M. sizes. Mechanical seal, O-Ring gaskets, and non-lubricated bearing equipped.



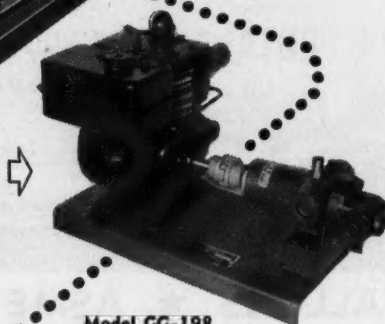
Fig. 200  
Truck Mounting Pump

Tractor and motor vehicle fueling and bottle filling motor drive unit. 10 G.P.M. Model GG-196. Mechanical seal, O-Ring gasket, and non-lubricated bearing equipped.



Model GG-196

Tractor and motor vehicle fueling and bottle filling engine drive unit. 10 G.P.M. Model GG-198. Mechanical seal, O-Ring gasket and non-lubricated bearing equipped.



Model GG-198

In all iron construction, above pumps ideal for handling anhydrous ammonia.



For complete information send for bulletins 2305B, A2300B and SP-342B today.



## VIKING PUMP COMPANY

Cedar Falls, Iowa



## Red Jet WEED CONTROL BURNER

USES LIQUID L. P. GAS — The Most Economical Burner Yet Designed.

- Uses Full Tank Pressure.
- Throws Flame 8 to 12 Feet.
- Flame Temperature 2500 Degrees, Plus.
- Burns 12 to 25 Gallons Per Hour.

The RED JET Has Many Applications in Farm, Commercial and Industrial Uses!

- Kills All Annual Weeds.
- Kills Insects — Destroys Their Eggs.
- Prevents Reseeding.
- Decreases Labor Cost in the Fields.

Manufactured by Northwest Fabricators, NYSSA, OREGON



Engineers keep a close watch on the accuracy of this experimental predetermining valve at Rockwell Manufacturing Co.'s new meter and valve testing station six miles east of Pittsburgh. Testing station was designed for the purpose of experimenting with and testing the various Rockwell meters and valves used for measuring and controlling fluid products.

vertising tie-ins of the sales promotional and advertising programs forecast by AGA for 1955, according to Wister Ligon, chairman of the general promotional planning committee. This "year-ahead" planning is designed to facilitate local level tie-ins.

## GAMA Reports Half Year Shipments

Shipments of gas operated central heating equipment during the first six months of this year exceeded those for the same period of 1953 by 5.6%, according to the Gas Appliance Manufacturers Association.

Highest shipments of automatic gas water heaters in 38 months were reported for June by GAMA.

## Burning Reported Best For Weeds in Alfalfa

Alfalfa producers can kill weeds in established stands by burning, at half the cost of chemical treatments. This is the report of University of California agronomist, Luther Jones. Mr. Jones says burning does not harm established stands nor does it greatly delay harvest.

Alfalfa producers in the Hilmar area of Merced county, Calif., put burning to a practical test in the control of weeds in alfalfa by utilizing a big butane rig with dozens of flame throwing nozzles towed behind a farmer's tractor.





**TAPPAN SUPER-SIXTY** with these outstanding features: Lift-off Oven Door for easy oven cleaning . . . and Pres-Toe Broiler that rolls full out with a touch of the toe.



**TAPPAN MEADOWBROOK** offers fine range features in a spacious 36-inch model. Two of the features your customers want are the built-in griddle on top of range and line-of-sight valve panel.

## **TAPPAN OFFERS YOU A COMPLETE LP LINE!**

*A range for every kitchen  
...every budget!*

Whether your customers want a small compact 20-inch model . . . a smart, new 30-inch range with a huge oven . . . or the standard 36 and 40-inch ranges, you can give them exactly what they want with a Tappan.

To back this LP line, Tappan offers complete LP promotion programs. See your Tappan representative and let him show you how to make extra volume and extra profits by putting a Tappan LP promotion to work in your market.



**TAPPAN HOLIDAY** All the big range features in a compact, space-saving 30-inch range. Huge, oversize oven.

*The **TAPPAN** Stove Company  
Mansfield, Ohio*

*For 73 years the makers of fine ranges*

**THERE IS NO BETTER  
100 POUND CAPACITY  
LIQUEFIED PETROLEUM  
GAS CYLINDER BUILT  
ANYWHERE IN THE  
WORLD TODAY**

### SPECIFICATIONS

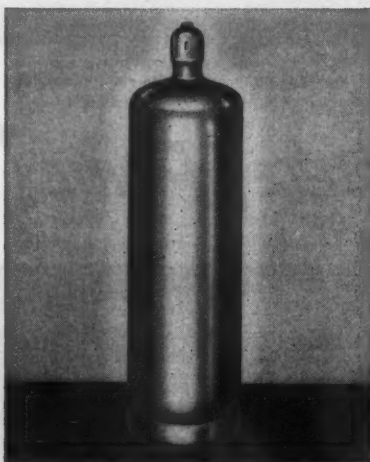
**Harrisburg Lite-Weight Cylinders**  
**CAPACITY** Propane, 100 lbs.—Butane, 121.4 lbs.—Water, 239 lbs. (28.7 gals.)

**NOMINAL DIMENSIONS** Diameter (I.D.), 14½ inches—Height, 44¾ inches

**WORKING PRESSURE** 240 lbs. per square inch

**CONSTRUCTION** High tensile strength alloy steel—Tare Weight, 72 lbs.—I.C.C. 4BA-240


**APPROX. UNITS PER CARLOAD** 500 to 550 cylinders



with aluminum ground coat

By manufacturing concentration on the one size of LP gas cylinder that is ordered by more LP gas dealers and bulk plants than any other, Harrisburg Steel is able to consistently offer you a precision-manufactured cylinder that has no peer. Every Harrisburg Lite-Weight Cylinder that comes off our modern production lines is hydrostatically tested to 480 p.s.i.—plus our own rigid strength and uniformity tests. Result: you can depend on every Harrisburg cylinder you buy for unsurpassed safety, for quality, for dependable performance. Write for literature and current prices.

HSC-LP-1/54

 **101 Years in Pennsylvania's Capital**  
**Harrisburg Steel**  
CORPORATION HARRISBURG 4 PENNSYLVANIA



**Bookkeeper at Delta Gas** gives truck delivery man amount of customer's bill. Books are kept posted to date so delivery man can get exact amount of bill.

### Two Way Radio Speeds Delivery

Delta Butane Gas Co. of Greenville, Miss., recently installed a RCA mobile communication system and equipped their three gas trucks and two pickups with radio phones. The installation, including the tower, receiving and sending unit, and truck phones cost around \$3500.

"We are finding," T. J. Williamson, manager, said, "that this two way communication system is really the answer. It has speeded our deliveries by anyway 50%. Our drivers never have to return because of a faulty address or misinformation on the location. And we are able to reroute several times daily, doing away with extra in and out trips. This mileage savings is showing up in our tire and gas account, too."

At Delta Butane the sending

and receiving is in the bookkeeping department, with the bookkeeper handling all truck routing. This makes it convenient for drivers, when making collections, to check with the bookkeeper and get the latest account status. Drivers carry a pad of duplicate statement forms. They are instructed to check with the bookkeeper before making out a bill, and in this way they can include any back balance due. Mr. Williamson says this procedure has substantially cut down accounts receivable.

"Because of our gain in the number of calls we can make," Mr. Williamson said, "and the lower delivery truck operation cost because of eliminating unnecessary in and out trips, we are going to save the cost of this system in less than 18 months."

### Parkdale Co. Moves To New Quarters

Parkdale Co., manufacturers of Beam LPG products, has moved to a new factory in Los Angeles.

Increased business, plus the potential in the conversion of internal combustion motors to burn butane and propane, especially in the materials handling field, was responsible for this step, according to Parkdale's general manager, L. C. Zonker.



New home of the Parkdale Co., manufacturers of L. P. gas products, in Los Angeles.



**"THE  
SINCLAIR 'BONUS'  
HELPS MY BUSINESS"**



There's more than a tank-load of LP-Gas in that truck! Backing you—and your customers is a bonus of 5 Sinclair extras—**INTEGRITY, REPUTATION, RESPONSIBILITY, PERFORMANCE and GOOD SERVICE.** These important extras add up to more and more satisfied, repeat customers—and a faster-growing, more profitable business for you.

Take advantage of the Sinclair BONUS. Find out about this top quality LP-Gas with high heating values—with moisture and impurities removed. It will pay you to investigate soon.

**SINCLAIR-A GREAT NAME IN OIL**

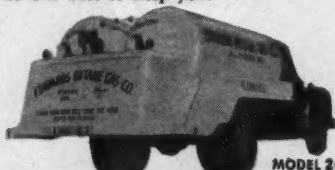
**SINCLAIR OIL & GAS COMPANY**

**Liquefied Petroleum Gas Division • Sinclair Building, Tulsa, Okla.**

## World's Finest Propane Delivery Units AT LOWER PRICES

Federal Tax Paid — Easy Terms

Hardly a day ever passes without our receiving at least one letter from a particularly satisfied customer. We get criticisms, too, but for the most part customers happily tell us we have done a good job helping them. Giving interested attention to every customer problem built our business. Tell us your problem and we will do our best to help you.



MODEL 200

**PAY ONLY 25% DOWN**

Balance in 18 mos. at 5% interest



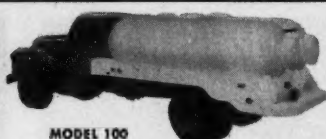
MODEL 300

Call Preston W. Grace  
Batesville 570 or 686



# WHITE RIVER DISTRIBUTORS, INC.

BATESVILLE, ARKANSAS



MODEL 100

New 1954 Chevrolet 2-ton (Model 6403) 2-speed axle, with 1400 W.G. twin propane tank, piped complete — \$3,845.00. With 1954 International L.P.G. factory equipped — \$4,095.00.

### PACKAGED TRUCK TANK UNITS

Prices include tank, piped complete, Viking KK-190 mechanical seal pump, 50' 3/4" filler hose, clearance lights, tank painted, ready to use.

#### MODEL 100

1400 W.G.	1600 W.G.	1800 W.G.
\$1,755.00	\$1,845.00	\$1,960.00
Add \$150.00 for Model 200		
Add \$250.00 for Model 300		

We can furnish any make or model NEW TRUCK, including Ford, Chevrolet, G.M.C., Dodge or International (factory LPG equipped), and save you up to \$600.00 on a new truck.

Any make or model pump or meter can be supplied.

New 1954 2-ton Chevrolet, Model 6403 2-speed, 825 x 20, 10-ply rear tires, \$2090.00.

Hose Reels — Fire Extinguishers — LPG Carburetion

SEVERAL GOOD USED PROPANE TRUCKS FOR SALE — IMMEDIATE DELIVERY

We sell the steak... not the sizzle! Our Truck Tanks are built for us by Nor-Tax to our rigid specifications.

## Contest Big Hit

A self-training contest for salesmen has developed excellent personal selling demonstrations in the utilities that have cooperated with the Servel Utility Division in developing this plan. Here, briefly, is how the plan works.

A self-training contest is usually announced at a meeting of the sales staff. Each salesman is to develop his own personal sales demonstration of the Servel gas refrigerator. At a specified later date he is to submit a written outline of the points he plans to cover in his presentation. He is also to practice and perfect his oral presentation so that he may compete with other salesmen in his group. A sample demonstration is presented by the sales manager, and salesmen are urged to take notes of ideas that they can incorporate in their own presentations.

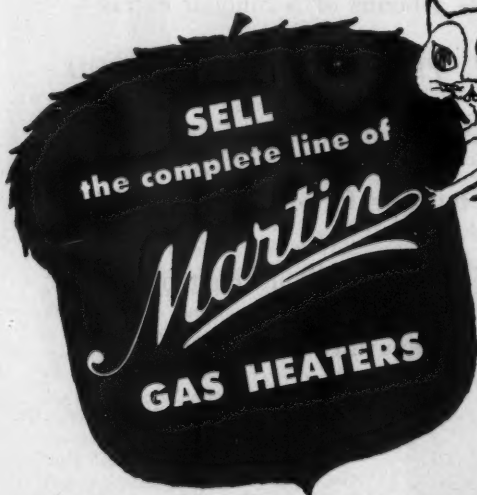
The salesmen compete among their own group at the next sales meeting and the presentation judged best by the utility's sales management is awarded a cash prize.

Group winners meet for a grand prize finals. This is an occasion for all salesmen to hear the best presentations and get ideas to further improve their demonstrations. Winners are selected by vote of the entire sales staff and prizes are awarded.

B. T. Frank, vice president of Milwaukee Gas Light Co., which used the self-training plan, points out, "Because the salesman has to prepare his own presentation in written form and then give it orally, he must study and know the product. And because he is permitted to tell the story in his own way, he does so naturally and fluently. Thus, being at ease, he lends a contagious enthusiasm and conviction to his presentation. This enables the salesman to get orders he might otherwise miss."

"This incentive sales program, while comparatively simple, has been so effective that we are going to use it on all other major gas appliances. It also goes over big with the salesmen themselves."

# To start the fall rolling...



8 Fully Vented Heaters  
15,000 BTU to 85,000 BTU  
23 Unvented Heaters  
10,000 BTU to 50,000 BTU

Yes, Martin Heaters are all AGA approved for natural, liquefied and manufactured gases.

Write your jobber or direct for complete catalog.

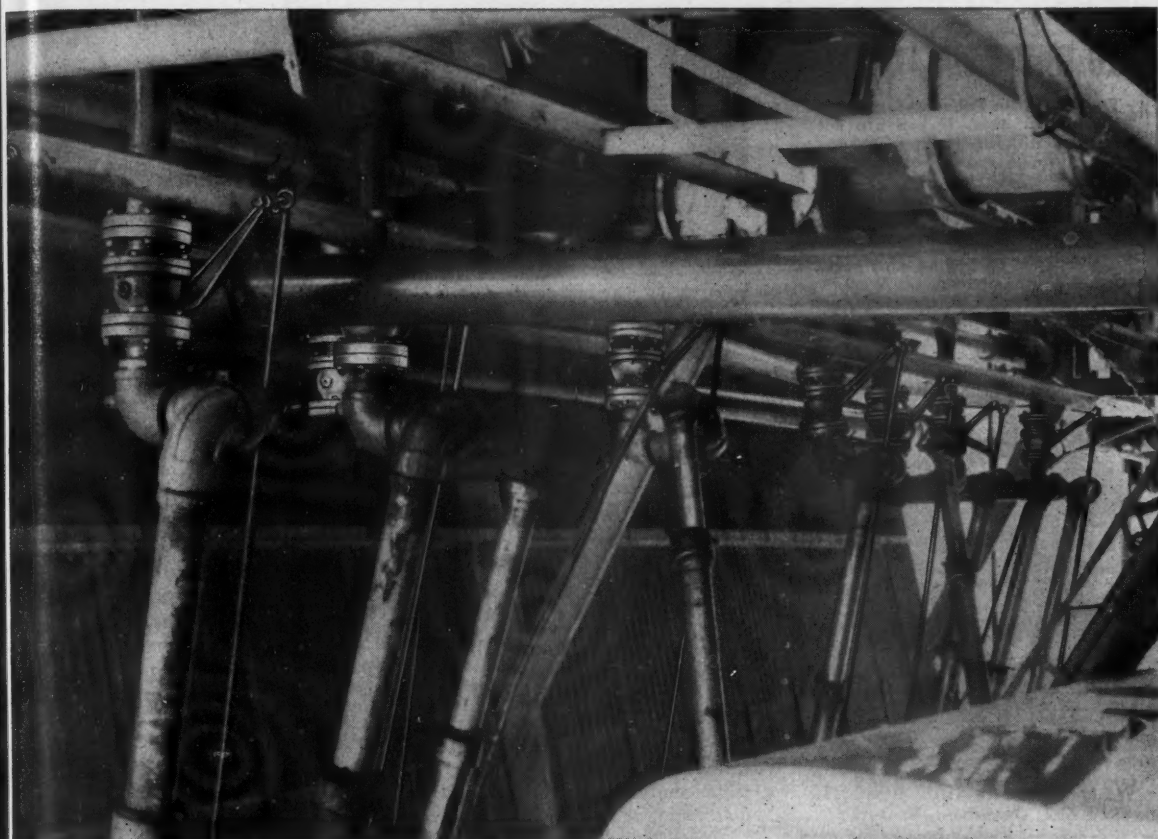


V 370



Over 49 years stove experience

# MARTIN STAMPING & STOVE CO., Huntsville, Ala.



## ***Busiest loading rack in the Midwest relies on Rockwood Ball Valves***

Day in, day out, twenty-four hours a day, the fuel loading rack above fills tank trucks — in record time.

Eight Rockwood Ball Valves perform this grueling operation, opening and closing in trigger time — permitting a full, round flow of fuel — and preventing dangerous oil sludge on the loading pavement by remaining absolutely leak-proof.

What makes Rockwood Ball Valves so outstanding? These four exclusive features assure trouble-free efficiency:

**Full Round Flow** — no change in shape or volume of fluid stream — no turbulence — no minimum loss.

**Quick Opening and Closing** — only a quarter turn needed, even under full pressure.

**Longer Wear-Resistance** — chrome-plated bronze ball withstands abrasion, pitting and scratching.

**Leakproof Seal** — pressure of fluid automatically positions ball against seat to form tight seal.

If you are not now using Rockwood Ball Valves, send coupon today for complete information. Valves come in all pipe sizes. Tested and listed by Underwriters' Laboratories, Inc.

# **ROCKWOOD BALL VALVES**

## ***FULL, ROUND FLOW***



**ROCKWOOD SPRINKLER COMPANY**  
410 Harlow Street  
Worcester 5, Mass.

Send me illustrated folder V-4 on  
Rockwood Full-Flow Ball Valves.

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Title.....  
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## 10 DAY TRIAL OFFER

Try the Martin Tube Bender on the job for 10 days. If you are not satisfied with its performance, return it to us and we will not bill you.

If you decide its the best bender you ever used and keep it longer than 10 days, we will bill you the regular price of \$19.50 plus postage and insurance charges.



### BEND TUBING EVENLY in close quarters with little effort

Dimensions: 9 1/2 x 3 1/2 x 3 1/2 — weight 4 1/2 lbs. Two sizes handle all jobs: #5 bends 3/8" and 1/2" o.d. soft tubing, #5A bends 1/2" and 5/8" o.d. soft tubing. Each without roll changes!

All bends are on 1 3/4" radius and are practically distortionless. Gear arrangement operated by ratchet lever

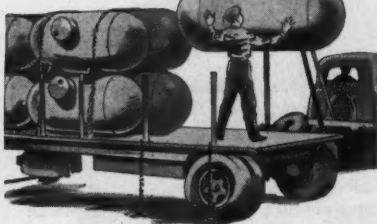
rolls the bend in the tube easily, makes bends in either direction by turning tool over and operating from other side. Sturdy — compact.

Write today for details on our free trial offer.

**W. H. MARTIN Tube Benders**  
Box 692, Owensboro, Kentucky

## NOW—PROMPT DELIVERY OF BURNHAM PROPANE SYSTEMS

### In Burnham Trailers



This quicker, more dependable delivery avoids expensive handling at destination. It eliminates the possibility of transit delays or possible damage associated with other type shipments.

The superior quality of Burnham engineered tanks plus the economy of truck deliveries direct from the factory gives you an opportunity to save that's well worth your consideration. Why not take advantage of it?

## BURNHAM LPG TANKS

Available for immediate shipment — 15 sizes — either top or end mounted in capacities from 250 to 1,000 gallons.



**Burnham Corporation**

TANK DIVISION • IRVINGTON, NEW YORK



Some of the members of the "45-29" club sponsored by Detroit-Michigan Stove Co. There are now more than 100 active members.

## Detroit-Michigan Sponsors "45-29" Salesmen's Club

Detroit-Michigan Stove Co. of Detroit is sponsoring an organization known as the Garland "45-29" club. According to the company, this is the only fraternal organization of commercial cooking equipment salesmen.

Paul Inskeep, director of sales for the company, says there are now more than 100 active members of the club, with pending applications totaling more than 1000.

Each salesman joining the club receives point credit for Garland sales, advancing through three ranks of excellence, identified respectively by a silver emblem, gold emblem and a diamond studded "45-29" club pin.

## Safety Lessons from Clear Lake Fire

The recent fire and explosion in a liquefied petroleum gas plant at Clear Lake, Calif., emphasizes the importance of meticulous care in regard to all safety precautions.

Inspection after the fire indicated that an employee had started to drive away from the plant after filling his twin 750-gal. bulk truck tanks without first disconnecting the 2-in. hose used in the transfer. A 2-in. liquid line was found pulled out of the threads where it was screwed into the header between the two tanks on the truck.

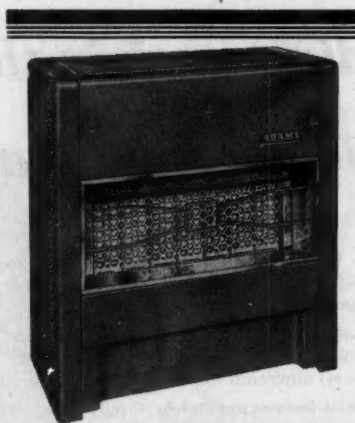
A 2-in. liquid line was also found pulled out of the butane storage tank where it was connected with the bottom outlet. It is possible that this occurred later when the tank ruptured during the fire.

Two of the three storage tanks at the plant were installed prior to the latest revisions of the safety orders of the State Industrial Accident Commission. When originally installed, excess flow valves were not required. These were later added in the piping about 8 in. outside the tanks, instead of being placed inside the tanks, as is now required.

Rupture of pipes between the excess flow valves and the tanks caused loss of fuel from both, and presumably added to the seriousness of the fire.

The third tank, which was equipped with the internal valves as now required, was undamaged, and any lost fuel escaped through the pressure relief valve. This tank was more than half full of propane after the fire was extinguished.

While the circumstances of the accident are not entirely clear, it seems apparent that the consequences would have been much less severe, if not entirely avoided, had the tanks been equipped according to the present regulations.



## CHEERFULATORS

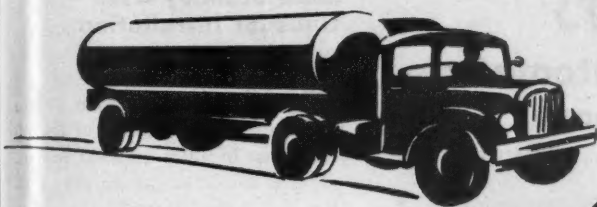
Customers complaining of high gas bills? Cheerfulators will cut that heating cost substantially. Vented and fully automatic.

**Write for Your Catalog**

**ADAMS BROS. MFG. CO., INC.**

Established 1898

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# BETWEEN YOU AND YOUR CUSTOMERS

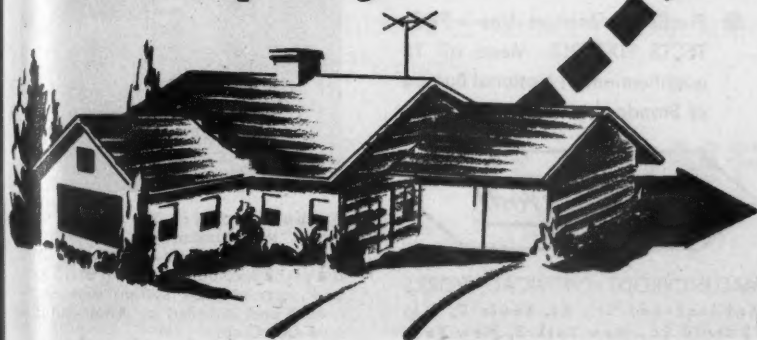
*Sprague*

## COMBINATION METER and REGULATOR

Establish and hold good customer relations by standardizing your metered system with the Sprague Combination Meter and Regulator. Combining modern styling in keeping with today's trend toward streamlined design and accuracy that gives the home-owner complete confidence in your service, this meter brings savings to you through fewer service calls, ease in mounting and a simple actuating design that allows proving by even the smallest of shops.



THE *Sprague* METER COMPANY



MAIN OFFICE and PLANT  
**BRIDGEPORT,  
CONNECTICUT**

BRANCH OFFICES  
**DAVENPORT, IOWA  
HOUSTON, TEXAS  
LOS ANGELES, CALIF.  
SAN FRANCISCO, CALIF.**

# PROFIT 2 WAYS with JOHNSON'S Automatic LP-Gas Stock Tank Heater

**1** Profit from the sale of the stock tank heater adaptable for any tank — concrete, wooden or steel. The automatic LP-Gas heater that means ice-free water . . . Johnson.

**2** Profit from an increased gas load — Johnson's LP-Gas Stock Tank Heater averages 600 lbs. per year. Multiply 600 by the number of customers you can sell and you have a sizable gas business.



## YOUR CUSTOMERS PROFIT TOO

It's been proven that warm water increases beef gains and milk production. Cattle take less feed yet maintain steady gains when they have lots of warm water during winter months. A Johnson LP-Gas Heater can pay for itself in one season. It's

easy to install. Stays lit and is completely automatic. It maintains 48° water temperature in the coldest weather. Guaranteed free of condensate problems. Contact your Johnson salesman or write today.

## JOHNSON GAS APPLIANCE CO.

597 E AVENUE N.W.

CEDAR RAPIDS, IOWA

Fifty Years of Quality Manufacture of Gas Burning Equipment

## GAS DEALERS... Double Your Income

We are signing franchises with bottle gas dealers all over "hard water" America. You have the set-up and the customers. Deliver rental softener units to homes, laundries, beauty parlors, cleaning plants . . . wherever soft water is needed. All you need are the softener units and the inexpensive regeneration equipment. Franchise includes the sale of DOWEX to all domestic, commercial and industrial areas.



Act NOW

While Good

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**Filter-Soft**  
FRANCHISE  
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FILTER-SOFT CORP. (Dept. BPN)

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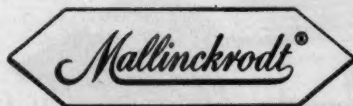
State \_\_\_\_\_

**FILTER-SOFT CORP.**

12911 ARTESIAN • DETROIT 23, MICHIGAN



- The accepted standard odorant for natural or liquefied petroleum gas — gives sure but harmless warning.
- Purified — Moisture-free — PROTECTS FIXTURES. Meets all 15 qualifications of National Bureau of Standards.



MALLINCKRODT CHEMICAL WORKS  
Mallinckrodt St., St. Louis 7, Mo.  
72 Gold St., New York 8, New York

## Solar Standby Uses Unusual Installation

A RADICAL departure from the conventional method of installation has brought unusual advantages to the L. P. gas standby system of Solar Aircraft Co., San Diego. Starting with a 30,000-gal. storage tank, the system supplies approximately 75% of the total gas used when the plant is operating on a standby basis.

The system was engineered and installed by American Liquid Gas Corp. of Los Angeles, working in cooperation with the industrial sales division of the San Diego Gas and Electric Co., San Diego fire department and the San Diego harbor commission.

Officials of the gas company recommended that L. P. gas be delivered into the plant distribution system at 1- or 2-lb higher pressure than natural gas in order to expedite the change-over from natural gas to L. P. gas. When it is necessary to change to standby operation, the L. P. gas system is started and the fuel is introduced to the plant gas piping system being served by LPG. As the higher pressure of the L. P. gas enters the line, it stops the flow of natural gas, locking off the natural gas company's regulator.

When it is desired to again revert to the use of natural gas, it is simply necessary to close the valve which connects the standby plant to the piping system and the natural gas comes right back into



Propane vapors are diluted with air in this combustion controller to 1500 Btu's. Mixture is delivered into the plant distribution system at 15 psi. L. P. gas standby system was engineered and installed by American Liquid Gas Corp.





## *Under Control - all the way...*

When you contract for Shell Propane, it's *Shell-controlled every minute from source of production to tank car or transport.*

Shell has long maintained the policy to sell propane only within the company's capacity to produce and deliver. This assures contract customers a continuous supply of Shell Propane.



## **SHELL OIL COMPANY**

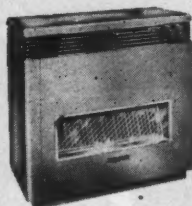


ALBANY • ATLANTA • BALTIMORE • BOSTON • CHICAGO • CLEVELAND • DETROIT  
INDIANAPOLIS • LOS ANGELES • MINNEAPOLIS • NEW ORLEANS • NEW YORK  
PORTLAND, OREGON • SACRAMENTO • ST. LOUIS • SAN FRANCISCO • SEATTLE

# MORE SALES and MORE PROFITS

## *Thermolaire* GAS HEATERS

### CIRCULATORS (Vented)



A distinctive and beautiful cabinet in all sizes. All vented circulators (except Model VC-20) equipped with double radiants in view behind high temperature glass panels. Pilots available.



### CIRCULATORS (Unvented)



Finished in a gracious soft brown to match the radiant type and vented circulator models. A handsome and excellent performing heater in sizes to meet your exact needs. Pilots available.

### RADIANT HEATER



A large capacity attractive radiant type heater equipped with double radiants—a desirable addition to any room.

### PORTABLE MODEL

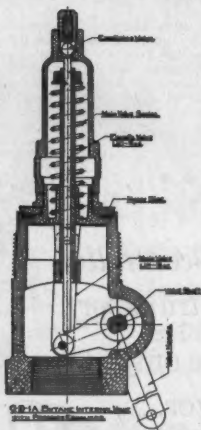


A model rated at 15,000 BTU for quicker than usual auxiliary heat. Cabinet finished in gleaming white or brown porcelain enamel.

Phone or write for illustrated literature and prices  
**BIRMINGHAM STOVE & RANGE CO.**  
**BIRMINGHAM 2, ALABAMA**

"Builders of fine stoves for over 50 years!"

## POSITIVE CLOSURE FOR ALL L. P. GAS TANKS



Externally operated by remote mechanical control, C-B Valves keep tank outlets closed unless their unique lever action is applied to keep them open.

Valves and fusible links available for storage, bulk delivery and transport tanks, from 2" threaded type to 3" full flow flange type.

• For complete information write:

**C. F. H. BOHNHARDT**  
**C-B EQUIPMENT**

1711 East 41st Place - Los Angeles 58

## ONLY RECTORSEAL #2



offers you  
so much  
for  
so little

In thread compounds,  
Rectorseal #2 leads  
the field in quality.

Just consider these advantages:

Thin in the can, it's easier, more economical to use. Thick in the joint, it holds pressures to 11,350 psi. Insoluble in L.P.G., natural and manufactured gas—all petroleum fractions, and anhydrous ammonia. Never hardens, crumbles, cracks or gets brittle. Holds odorants. Ideal for all gas industry thread joints. Conveniently packaged in brush-top cans for easy, economical application.

Prove to yourself, "there's no seal like Rectorseal" in price or quality. Your supply house has it or can get it for you.

Write for free sample  
and additional information.

**RECTORSEAL, Dept. "A"**

2215 Commerce St. Houston 2, Texas

**RECTORSEAL #2**

MAKING THE L.P. GAS INDUSTRY SAFER

the system and the plant.

This unusual arrangement provides a safety feature which is not normally obtained with other arrangements, particularly those which employ the use of the three-way valve. Under this system if the standby plant should stop because of electrical or mechanical failures, the natural gas would immediately enter the line and no burner or pilot light failures could occur.

From the storage tank the fuel is brought into a 300-gal. vaporizer, water heater type. From here the undiluted propane vapors are brought into the plant at 15 psi in 2½- to 3-in. pipelines. They are then diluted with air in a Selas combustion controller to 1500 Btu's. This mixture is delivered into the plant distribution system at 15 psi, which is a higher pressure than that of the natural gas.

While the entire Solar plant does not switch to the use of L. P. gas during the standby periods, approximately 75% of the load is converted to LPG and most of the heating ovens, furnaces, acid tanks and lead melting pots are connected to the L. P. gas system.



Right: Solermic oven, one of two such units in Solar Aircraft Co. plant, San Diego, is fired by L. P. gas when the plant goes on standby operation.

## Coleman Co. Moves To New Building

The San Francisco branch of Coleman Co. has moved to a new industrial building at 250 Sylvester St. in South San Francisco. The move was completed Sept. 1.

Coleman will occupy the entire building which was especially designed as a distribution center for the company's expanding line of heating and air conditioning equipment. The building includes 20,000 sq ft of warehousing.

So easy to sell with

**White Glass** Lining

and other top features!

**White WATER HOTTER**

Automatic Water Heaters  
for LP Gas



#### FILM OF FLAME

Single port burner in gas WATER-HOTTER means NO clogging ever. Amazingly fast "pick-up" for PLENTY of hot water always.

**White Glass**

#### LINING

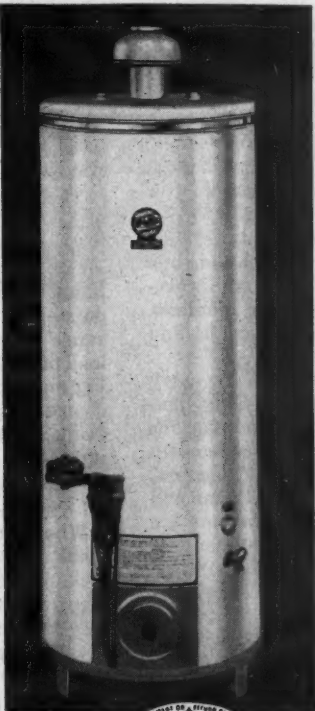
Can't rust . . . EVER! An essential point in many areas—important in all.

#### NATIONAL ADVERTISING

White WATER-HOTTERS are and have been consistently pre-sold for you in large, color advertisements in leading consumer magazines over many, many years.

**Plus 14 other strong competitive advantages!**

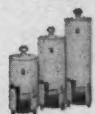
Stand a **White Glass** lined WATER-HOTTER alongside any competing make—on your own floor, before your prospect's eyes—and compare them point for point. In every detail you can prove your **White** equal or superior—which means in all, adding up point by point, you and your **White** clinch the sale! That's why more and more dealers every week are switching to **White**. Why wait? Get the facts now. Write!



#### WHITE PRODUCTS CORPORATION

Dept. BP-10, Middleville, Michigan  
Export Office: 201 N. Wells St., Chicago 6  
Water Heating Specialists Since 1930  
AN EDWARD LAMB ENTERPRISE

20 gal., 30 gal., 40 gal. and 60 gal.



## A COMPLETE LINE OF GAS BURNERS..



FURNACE



BOILER

### FOR HOUSEHOLD HEATING

Whether for conversion or original equipment, Barber has a burner for every furnace or boiler, old or new.



WATER HEATER



INCINERATOR

### FOR APPLIANCES

Barber burners are used by leaders in the appliance field. Our jets can convert burners from one type of gas to another.



STOCK TANK



BAKERY

### FOR FARM AND COMMERCIAL

Barber burners are ideal for commercial heaters and ovens. A complete line of LP burners are available for on-the-spot conversion of farm and business heaters.

THE **Barber** GAS BURNER CO.  
3700 SUPERIOR AVE.  
CLEVELAND 11, OHIO



## HandyTube Bender

**Smoothly Bends ANY  
Pipe or Tubing**

**$\frac{3}{8}$ " to  $1\frac{1}{8}$ " O.D.**



• Just a twist of the wrist assures perfect, even bends . . . right-angle, any angle, U and offset — every time. Eliminate need for els. No more guesses — no kinks! Save enough time, labor and money on ONE job to pay for your Handy Bender.

See your supply house — or write for free folder today.



**HOLSCLAW BROS., INC.**

434 N. WILLOW ROAD  
EVANSVILLE, INDIANA

## Natural Gas Standby



A typical Draketown Propane Plant for augmentation and standby

Whether your load is large or small, you will find a Draketown design to meet your specific requirements. Ready at the turn of a valve — completely automatic if you wish — accurate and dependable — your Draketown Plant keeps that pressure up when things get rough.



**PROpane PLANTS**

**"Good Gas Insurance"**

If you have a gas problem, we can help you. We operate from coast to coast and overseas. Phone or write today — no obligation!

**DRAKE & TOWNSEND**

INCORPORATED

Consulting • Design • Engineering • Construction

11 WEST 42ND STREET • NEW YORK 36, N. Y.



Vernon A. Netherland, driver, (right) and Jimmie Allen Jr. talk over last minute details before this truckload of 1000-gal. propane tanks is transported to a dealer in northern Michigan.

## These Men Drive A Million Miles A Year

"Our men drive over a million miles a year." So says Jimmie Allen Jr., maintenance superintendent for J. B. Beard Co.'s fleet of eight tractor-trailer trucks. Beard drivers transport L. P. gas and anhydrous ammonia systems to the 34 states served by the company's Shreveport, La., plant.

In addition to maintaining its own fleet, Beard leases from 4 to 12 trucks.

Consignment points reached regularly by these trucks include such locations as far from Shreveport as northwestern Montana, northern Michigan, Canada and the East Coast states.

Although the trucks carry heavy steel products, weight limitations imposed by the various states present almost no problem to the shipping department. "That's because the L. P. gas and anhydrous ammonia systems are so large that we can't get many on one truck," explains Joe Pitner, manager of stores control.

What does present a major problem is the maze of regulations imposed by states regarding the height, width and length of loads and the special licenses and permits required by some states.

"All our trucks are fueled by propane," Mr. Pitner says. By using L. P. gas trucks can operate with greater fuel economy and lower maintenance costs.

"Some states collect a tax on L. P. gas fuel when our trucks purchase it, but others require a special fuel users' license and bond because they collect directly from us every month. Other special truck taxes levied by states must also be figured before the truck can be loaded and sent on its way."

The traffic and purchasing departments try to avoid as much as possible the waste of returning an empty truck to the plant after it has delivered its load. Wherever possible, the two departments arrange for the truck to pick up a load of materials or equipment being made for Beard for use in a company product. Thus, trucks going up to the Chicago area load up with L. P. gas system multi-valve fittings manufactured there for Beard.

When a truck driver leaves the plant without arrangements to pick up a return load, he is usually instructed to contact the plant before returning in the event that an order comes through while he is en route to his destination.

In addition to the East, the Shreveport plant sends its trucks westward to Montana, Wyoming, Colorado and west Texas. The Pacific Coast and Mountain States are reached by Beard's Stockton, Calif. plant.

# Built to Last



LP-Gas Storage Tanks by Downingtown Iron Works are built to last... will keep your maintenance costs low throughout year after year of carefree service.

**Special Welding Techniques**—developed by Downingtown experts and approved by ASME—produce welds that are extra strong and sound,

exceptionally smooth and neat. Welds are spot checked by X-ray with almost twice the number of pictures required by ASME Code.

Construction meets all requirements of ASME, API and NBFU. Equipped with first-quality valves and fittings if desired. Foundation drawings supplied with tanks.

Capacities from 4,000 to 30,000 gallons (W.C.). Write for detailed specifications.

**Sales Offices:** 227 Hanna Bldg., Cleveland 15  
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## DOWNTOWN IRON WORKS, INC.

138 Wallace Avenue, Downingtown, Pennsylvania

New York office: 52 Vanderbilt Avenue, New York 17, N. Y.

DIVISION OF

**Pressed Steel Tank Company**

MANUFACTURER OF HACKNEY PRODUCTS

Milwaukee 14, Wisconsin

LP-GAS CONTAINERS FROM ONE POUND TO 30,000 GALLONS

## 5 Reasons WHY BETTER DEALERS EVERYWHERE

SELL THE NEW

# NarrowWall

**EASY INSTALLATION**

...in any 2x4 stud wall in new or present homes.

**MORE WARM AIR**

...at no extra cost with the famous Holly Secondary Heat Exchanger (Pat. 2602441).

**'54 AGA APPROVAL**

... with full rating on L.P. or Natural Gas.

**NEW BURNER**

... tested at factory under full operating conditions before shipment.

**NO CALL-BACKS**

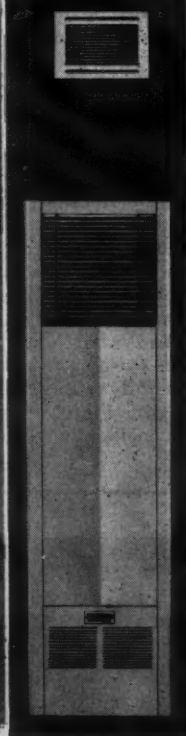
...that eat into profits, because of Holly quality, design and production methods.

**MORE PROFIT FOR '54**

Write for complete dealer facts today.

**HOLLY MANUFACTURING COMPANY**

917 S. Arroyo Parkway, Pasadena 2, California



You'll be happy with **holly**

## Take Your Demonstration To Your Prospect

Appliance dealers no longer need to worry about step No. 1—making Mr. and Mrs. Homeowner come into the showroom for a demonstration—in their effort to increase sales of clothes dryers and water heaters. By following the example of one enterprising Florida salesman they have this vexacious problem completely licked.

Gene Arnold, an aggressive salesman with the Western Natural Gas Co. of Jacksonville, long ago realized the effectiveness of the "prospect-participation" demonstration, but was well aware of the chances of some of the most likely buyers drifting into a competitor's showroom for this demonstration.

To combat this possibility he designed and built an unique trailer. Completely equipped with water heater, washing machine, and clothes dryer, it forms a compact home laundry unit which he tows behind his car to the prospective buyer's door. Tanks for the L. P. gas are conveniently located opposite the hot water heater on the right side of the trailer and are of sufficient capacity for many home demonstrations.

The prospect brings out her laundry basket and, as Mr. Arnold stands by to oversee and give his sales talk, she quickly completes the washing and drying operations in little more time than she regularly spends in putting up and taking down the backyard clothesline. She sees at first hand the superior results from the modern automatic laundry, and the ease with which she has completed her wash-day chore greatly lowers her sales resistance.

And what about new prospects? The eye-appeal of the mobile unit generally causes interested neighbors to gather around asking questions, and, incidently, making appointments



**Cecelia Maloney** impresses prospects by the speed and ease with which she has done their weekly laundry.

for future demonstrations. Very few housewives turn down the welcome service that Mr. Arnold cheerfully renders, and his list of potential buyers continues to lengthen.

So impressed by the results of Mr. Arnold's home demonstration program was Cecelia Maloney of Miami, that she had him build a duplicate trailer for her Maloney Distributing Co. For sales meetings and county fairs the trailer has no equal as a selling aid, reports Miss Maloney. Before starting a tour of a strange town she often contacts the local newspaper, and because of the novelty of her sales approach, she is given a generous publicity write-up which greatly simplifies her public relations job in the new community.

As one who has tried out a novel idea and found it highly successful, Miss Maloney wholeheartedly endorses the use of the home demonstration trailer. She suggests that LPG dealers throughout the country should take advantage of this highly effective sales medium in their effort to spread the use of gas appliances in the home.



**Exterior view** of the newly constructed tank manufacturing plant of Steel Tanks Inc. in New London, Minn. The plant, recently opened with a day-long celebration, will fabricate L. P. gas systems for United Petroleum Gas Co. of Minneapolis.

## New Depreciation Plan Announced by REA

**A** NEW approach to depreciation has been worked out by REA for the electric program. REA strongly recommends that the new plan be used as of January 1, 1954, and it will be required as of January 1, 1955.

A principal feature of the new approach is that REA recommends not actual depreciation rates to be used but a range of rates from which borrowers select according to local conditions. Generally speaking, depreciation rates under the new system will be somewhat lower than those formerly in use.

### Depreciation Defined

Depreciation accounting, as practiced in the utility industry, is simply the writing off of the net cost of electric plant over the life of the plant. It does not include the concept, held by some, that depreciation is to provide the necessary funds for replacement of plant or for repayment of long-term debt.

The new lower rates will result in increased margins on coop books. This change will not in any way affect the cash position of the business, and borrowers are urged to continue operating their systems as efficiently as possible regardless of the greater margins.

### Funds Needed

*The cash equivalent of depreciation will not be enough in the future to repay the principal borrowed to construct the original plant. Thus, each borrower will have to accumulate adequate margins to have sufficient funds to pay its debt to REA.*

Condensed from the July, 1954, issue of Rural Times, published by REA.

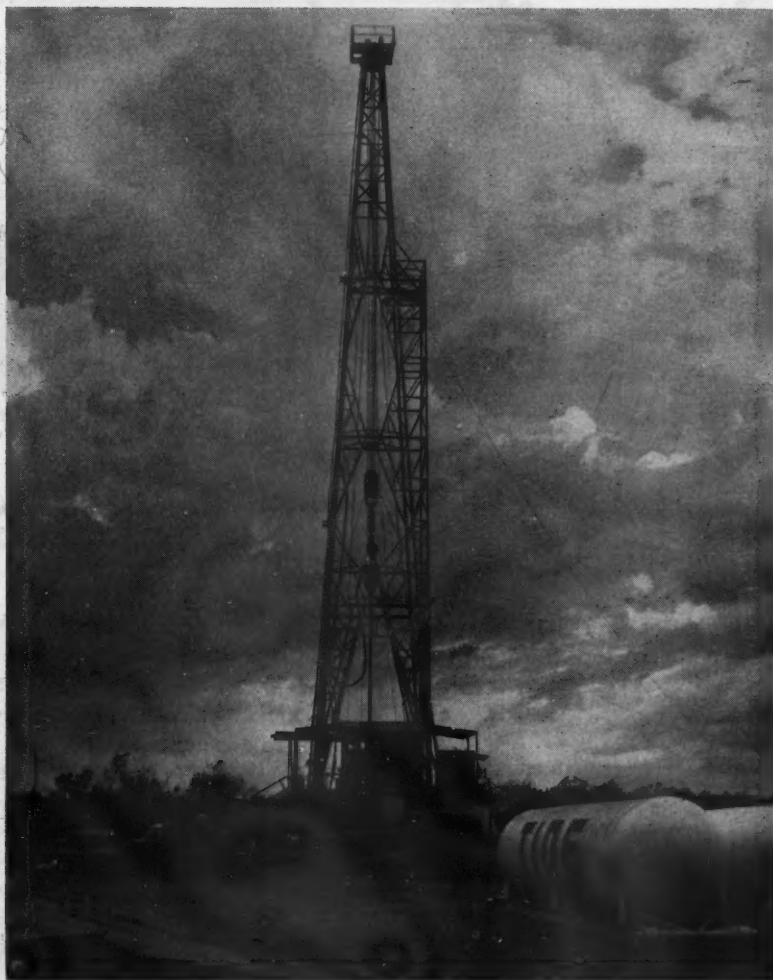




## **Butane-Propane**

# **POWER SECTION**

**INSTALLATION • CARBURETION • SERVICING**



Oil well drillers consume large volume of fuel obtained from Tide LPG Inc., Edinburg, Texas.

(For a story about Tide LPG, turn to page 149)

# FIRST all the way IN LPG POWER



**INTERNATIONAL Model RP-205 ROADLINER®** with LPG power. GCW rating 55,000 lbs. 142 or 157-inch wheelbases. Famous Comfo-Vision cab with Sweepsight windshield. Green-tinted non-glare safety glass optional.

**International Harvester was first** to develop safe, factory-installed LPG truck power.

**First** to offer such a wide range of LPG models, from 14,000 to 90,000 lbs. GVW ratings.

**First** to receive the Underwriters' Laboratories listing—with all the safety features required by UL.

More and more truck owners are turning to

LPG-powered INTERNATIONALS for more efficient power and lower maintenance costs—and for the long life and proved performance that has made INTERNATIONAL the heavy-duty sales leader 22 straight years.

Let LPG-powered INTERNATIONAL trucks help lead you to lower maintenance costs. Ask your INTERNATIONAL Branch or Dealer for a demonstration. Time payments arranged.

**INTERNATIONAL HARVESTER COMPANY • CHICAGO**



International Harvester Builds McCormick® Farm Equipment and FARMALL® Tractors... Motor Trucks... Industrial Power... Refrigerators and Freezers

*Better roads mean a better America*

## INTERNATIONAL TRUCKS

*"Standard of the Highway"*



Tide's bulk plant is used principally as supply for the truck service station and for filling cylinders.

## Texas Distributor Builds Large Motor Fuel Volume Without Domestic Service

The main objective of Tide LPG is supplying fuel for engine operation and for major agricultural and industrial uses. Any domestic fuel sold is purely incidental.

By Carl Abell

ONE would hardly suspect when passing the Tide LPG Inc. plant at Edinburg, Texas, that this small establishment is headquarters for an operation delivering close to 4 million gallons per year. There just does not seem to be enough equipment around to handle that amount of fuel. Just a tiny storage plant with five 1000-gal. tanks manifolded together, a small shop and office building, a row of tractor tanks and several domestic type and skid mounted tanks

in the yard. Most of the bulk tanks are 500- and 1000-gal. sizes or, if you pass when there is a temporary lull in oil-well drilling in the neighborhood, there may be a 6000-gal. skid tank at the end of the row.

From several standpoints this is one of the most unusual operations in the United States. It does not have the expense of installation and operation of an extensive storage plant, because its two sources of fuel are production plants in the immediate

vicinity, and its consumer tanks are sized so its deliveries are almost uniform throughout the year. On this basis extensive primary storage is not necessary at the refineries, nor is intermediate storage needed at the Tide plant.

The storage facilities at the headquarters are useful mainly to provide service station supplies for local and transient trucks, and to fill trailer bottles and removable cylinders for a few small farmers using vapor systems on small tractors. The rest of the company's fuel volume is delivered direct from the production plants to the customers' storage by three bob-tail trucks and one 4000-gal. semi-trailer transport.

The most unusual feature of all: Tide LPG is not the outgrowth of a domestic fuel business. Any domestic fuel that the company sells is purely incidental to the main objective of supplying fuel for engine operation and for other major agricultural and industrial uses. If the farmer wants to operate his kitchen appliances from the tank that stores fuel for his tractors, cotton picker, and irrigation pump, that is his business, but Tide is not looking for any strictly domestic accounts.

Tide LPG Inc. is affiliated with and operates as a working unit of a larger business known as Tide Petroleum



The Tide service truck delivers truck and tractor tires and transports small domestic tanks.



**To clear the reputation of LPG as a tractor fuel, it has been necessary to devote a large amount of time to rectifying other people's mistakes.**

Products Inc. The latter is engaged in the sale of gasoline, oil and other petroleum products, both through a super service station and as a wholesale distributor to the farm trade. As originally set up, this business had included a number of retail gasoline service stations. In order to release personnel to carry on other planned activities, these stations were recently sold to Continental Oil Co.

In addition, the company is the South Texas distributor for Kelly-Springfield tires for passenger cars,

ganization. The two companies were founded three years ago by two young men who grew up in the valley: Donald L. Bentsen, son of one of the two Bentsen brothers who cleared the jungle of mesquite and cactus out of the lower river bottom and put the first water on the land, and Jackie Field, formerly consignee for the Texas Co. at Mission, Texas, and son of the original consignee at that plant. With this background it was quite natural that after Mr. Bentsen finished his post-college

for the domestic market would merely make a bad matter worse, whereas the carburetion market seemed to be susceptible to almost unlimited future development.

It soon became apparent that LPG tractor carburetion was in disrepute in certain parts of the valley largely because of mistakes made by well meaning operators who converted engines with too little understanding of the carburetion problem. One of the most frequent mistakes had been the installation of vapor systems on heavy duty tractors for which the vaporizing capacity of a domestic type cylinder is totally inadequate. It has been necessary to devote a large amount of time to rectifying



**More than 1000 tractors** have been converted in the Tide shop in the past three years.



**Special tanks** with fittings in the end make neat installation in enclosed trucks.

trucks and tractors, and operates a large recapping plant. It has also expanded into the agricultural chemical field, selling insecticides, fertilizers, defoliant, weed killers, soil fumigants and fungicides. Some of these products are compounded by the company, and sold under its own brand labels.

The main interest of both companies is the sale of farm supplies which are used up and replaced. Carburetors and any other durable units are handled only as a means of creating demand for expendable supplies. While there are separate sales forces for each of the four major activities, close cooperation is maintained, so each sales force is constantly supplying new prospects to the other departments.

Tide is strictly a young man's or-

term in the air force he should come back to his home country and join forces with Jackie Field to set up a business serving some of the essentials of agriculture.

The selection of LPG as one of the company's activities was the result of Mr. Bentsen's extra-curricular observations made while he was working for Uncle Sam. While stationed at the Santa Ana Air Force base in Southern California, the extensive and successful use of LPG as tractor and truck fuel had come to his attention. He was impressed by the tremendous volume of fuel consumed by these operations. Returning to the Rio Grande he discovered that the local LPG companies were competing desperately for the domestic business but that carburetion had not had the attention that it deserved. It appeared that another new competitor

other people's mistakes in order to clear the reputation of LPG as a desirable tractor fuel.

Mr. Bentsen relates that the need for this was evidenced early in his experience, when in company with O. L. Garrettson, he called on a local farmer who was having regulator trouble with some vapor withdrawal installations on tractors which should have been satisfactory with this equipment. The fuel account was not Mr. Bentsen's and the carburetors had not been made by Garrettson, but the owner was talking indiscriminately and at large about the impossibility of getting LPG fuel that was not loaded with impurities. They checked one of this customer's regulators and found that it was becoming clogged with a sticky black deposit, which the customer claimed, of course, came from the fuel.

"Fuel can contain impurities," said Mr. Garrettson, "and on very rare occasions it does contain material that looks like this after the fuel evaporates. But it can only show up where the evaporation takes place. This is a vapor system and if your fuel did contain that muck, it would be in the cylinder instead of in the regulator. It could not travel with the vapor."

"What you need to do is get rid of these rubber hoses between the primary and secondary regulators and to replace them with either good neoprene hose, which is not soluble in petroleum products, or with copper tubing. This stuff that you are getting in your secondary regulator does not come out of the fuel at all; it is the rubber lining of this hose which never should have been installed where it is subject to reaction of LPG vapors."

With conditions like this frequently encountered in the field, it was inevitable that the majority of tractor dealers should be unenthusiastic or even hostile to the use of L. P. gas. Several of them preferred to have nothing to do with LPG in spite of the fact that their own factories produced LPG equipped tractors and recommended them where the fuel price was favorable.

Mr. Bentsen and his service staff formed the habit of making frequent calls on the tractor agencies, trying to convince them that meeting their service problems on their LPG equipment involved a little extra know-how.

The results of this consistent visiting have been rather surprising. Several tractor agencies which were formerly either disinterested or hostile have overcome their prejudices and are selling factory LPG equipped tractors with enthusiasm. Several of the tractor agencies in Edinburg, Pharr and McAllen send all of their service work on LPG tractor equipment to the Tide shop. Even more important, from the standpoint of profit, these same tractor agencies are recommending Tide as a source of fuel.

During the three years since it entered the LPG business, Tide has converted more than 1000 gasoline engines. While this is in itself a sizeable volume of business, the company's main objective is the sale of fuel, and

they look on the sale of carburetors as the ordinary domestic supplier looks on the sale of appliances. It is merely something that is necessary to the accomplishment of the main objective of the business.

The accounts served fall mainly in four classes: oil well drill rigs, water well pumps, tractors and trucks. A few passenger car engines are converted on special occasions but this business is not sought. It is handled only as an accommodation to farmers and other fleet operators who wish to put all of their rolling stock on the same fuel.

The carburetion equipment installed in making conversions varies with the engine and the service. For most tractors and light vehicles the Dix system is generally used on account of simplicity of installation and service. J & S units are used for certain installations for which special design makes them particularly adaptable. In larger engines, where maximum power output is of prime importance, the choice is generally Ensign.

Conversion procedure includes high compression and cold manifolds

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★ SET IT  
★ SEAL IT  
★ FORGET IT

UL

where this expense appears to be justified and is agreeable to the owner. They are well aware that at least 90% of the alleged carburetor trouble originates in the ignition system, so every carburetor installation includes bringing the ignition system up to its peak efficiency. No conversions are undertaken on engines which are in need of major maintenance operations until after the owner has had them put in good mechanical condition. In order to maintain good working relations with the truck and tractor dealers this recon-

**A very large volume of fuel is consumed by drilling rigs.**



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Specify Western and you'll receive the swift service you want plus Western's other features: tanks furnished in appropriate colors; factory design for quicker, easier installation; and larger capacity where possible. If you wish Western will give you a definite date of arrival of any tank you order.

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**TANK AND STEEL CORP.**

Phone 5-7517    Box 1013    Lubbock, Texas

ditioning work is not done in the Tide shop; it is referred to the agencies wherever possible.

One of the inevitable problems of this type of business is to get customers to put in storage that is large enough to make economical delivery possible. To encourage larger customer storage Tide rents tanks of the larger sizes for very nominal prices, and also sets up a price scale for gas that gives the customer a saving for deliveries in large quantities.

The best deal of all goes to operators of oil well drilling rigs. For these operations Tide lends tanks of from 6000. to 8000-gal. capacity, moves them and connects up the fuel lines when the rigs move to new locations within the company's delivery area, and gives the customer a price benefit made possible by the use of the 4000-gal. transport in making deliveries. This transport is a highly efficient rig, equipped with a compressor for unloading.

For the first two and a half years of the company's operation, Mr. Bentsen, assisted by Raymond Reynolds, an experienced LPG carburetion man and now sales engineer for Tide, personally supervised the LPG activities. With the overall growth of the two businesses, it became necessary for Mr. Bentsen to devote more of his time to other problems. This necessitated placing an experienced man with LPG background and engineering training in charge of the Tide LPG operation.

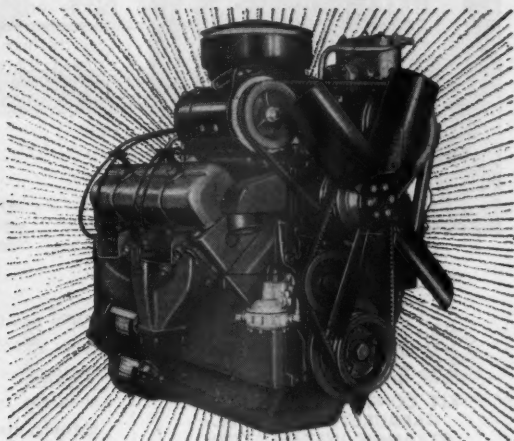
Claud Hill, who had specialized in gas and L. P. gas engine problems, had secured his mechanical engineering degree at Southern Methodist University, and had spent several years as a field engineer for the na-



**Truckers asked for it... now in production**

# THE NEW MIGHTY REO V-8

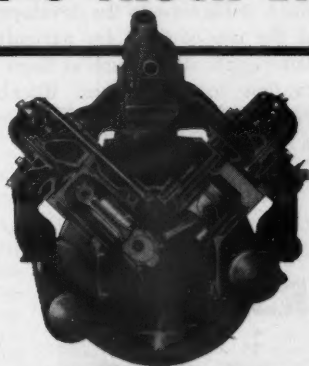
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Only 39 1/4" long overall!  
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## HERE IS A SHORTER ENGINE

The new REO V-8 is shorter than any other heavy-duty truck engine...just 39 1/4" overall! Permits bumper-to-back-of-cab dimension of only 96"—hauls 35-ft. square nose trailers without exceeding 45-ft. overall vehicle length.

## HERE IS A LIGHTER ENGINE

The new REO V-8 weighs less than any other heavy-duty truck engine on the highway—less than half as much as some. It hauls more revenue, legally, than any other engine.

**195 h.p. 220 h.p.**

## HERE ARE MORE MILES PER GALLON

The new REO V-8 is downright stingy with gas—delivers up to 150 extra miles, and more, from every 100 gallons.

## HERE IS EASIER MAINTENANCE

In the new *Gold Comet*, REO has achieved one of the cleanest V-8 engines ever designed. It's convenient, accessible—everything is within easy reach.

## HERE IS LONGER ENGINE LIFE

No truck engine anywhere can compare with the new REO V-8 for long-term profit-potential. Outstanding stamina helps the new REO V-8 deliver highest ton-mile profits ever known in heavy trucking.

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The REO V-8 is not a souped-up version of an old, outdated power plant. It's all new, from fan to fly-wheel! Output? A startling 1/2 h.p. per cu. in. of displacement—more than 25% higher than the next nearest engine; 35% more than the average of all engines of 360 cu. ins. and larger. It's the world's most modern truck engine.

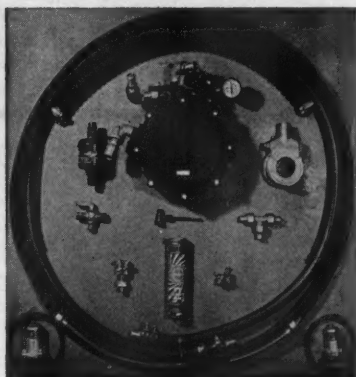
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A FITTING COMPANION  
TO THE WORLD-FAMOUS  
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LPG Carburetion Division

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Because they have large engines and operate continuously, drilling rigs must be supplied with a very large amount of fuel.



tural gas department of Sun Oil Co., was selected for this appointment. Full of energy and drive, Mr. Hill sees no reason why the company's growth should be limited to the carburetion accounts. With sales, service, and delivery departments functioning smoothly, he is devoting much of his time to the development of the use of LPG for agricultural flame applications, such as flame cultivation in row crops, ditchbank clearing, and weed and insect control in field crops.

Up to the present time the Tide LPG advertising activities have been nominal. A few radio spots—two or three per month—on the program carried out by Tide Pétroleum Products, have been devoted to tractor conversions, and there has been almost no newspaper advertising of LPG. With the recent upsurge of competitive activity, the company is laying plans to add consistent advertising effort to the sales promotion efforts by the staff.

During the past three years the carburetion picture in the lower Rio Grande valley has changed materially. Along with Tide's growth came a healthy recognition on the part of tractor dealers, farmers, and other butane and propane interests of the practical and economical value of the products as motor fuel.

While Tide's growth was outstanding, this company got only a small share of the increase in motor fuel consumption. The swing from gasoline to propane became so large that several of the gasoline distributors serving the area felt compelled to embark in the LPG business on the side to protect their diminishing volume. They are aiming particularly at the farm power market, not only to protect their engine fuel volume, but also to maintain the sales of their other automotive petroleum products, engine oil and lubricants.

This is the same kind of intensive competition which Mr. Bentsen avoided by staying out of the domestic fuel market. He is not worried. His business is now firmly established, and he believes that here, as well as in most other intensive farming areas, the surface has still only been scratched.

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Here's the biggest news in the Liquid Petroleum Gas Industry. Zenith\*, one of the oldest and most respected names in the field of automotive carburetion, is now in production with LP-Gas Carburetion systems of the most advanced design.

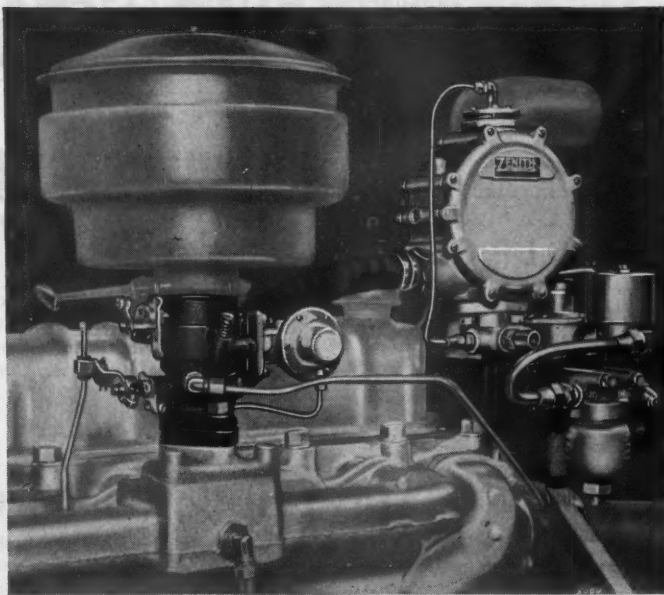
By combining an unmatched know-how in the field of commercial vehicle carburetion with extensive modern manufacturing facilities, Zenith is able to present to the industry, package installations consisting of newly designed LP carburetors with pre-determined calibrations and vaporizers, regulators, filters, and lock-off. These installations are engineered for fast, simple application and comprise a compact grouping of the essential equipment for a good running job.

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Zenith's entry into this fast growing field means that jobbers, dealers and users of LP-Gas Fuel systems now benefit from the uniformity of volume production methods, nation-wide service facilities and highest engineering standards.

These new Zenith LP-Gas Carburetion systems for Chevrolet, Plymouth, GMC and International (Silver Diamond) are now available thru authorized Zenith Carburetor Distributors. Complete information and prices can be obtained from your nearest Zenith Distributor or write the factory direct.

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## No Gum or Rust With LPG

By Carl Abell

**P**ROPANE is the ideal fuel for standby engines, because it never deteriorates in the tank. It is always ready to run, and it burns just as clean in these infrequently used engines as it does in those used every day.

This is not true of gasoline, which should always be used while it is fresh. Modern gasoline forms a certain amount of "gum" whenever it is stored for prolonged periods in contact with air. The rate of gum formation increases as the gasoline becomes older, and also as the storage temperature goes up.

Inhibitors are used in good grade gasoline to limit the gum formation, but there comes a time when they no longer inhibit. After gum starts to form in a tank, it acts as a sort of chemical yeast or catalyst to speed up the formation of gum in any fresh gasoline that may be added. Gummy gasoline deposits sticky compounds on the engine valves, in ring grooves, and on bearings, besides tending to choke intake manifolds.

A second drawback with gasoline in standby engines comes from the evaporation of light ends, which are needed in the fuel to insure quick and easy starting. These starting ingredients are lost through the vent-hole in the filler cap, which accounts for the difficulty generally experienced in starting engines that have been out of service for weeks or months, a condition typical of standby engines.

L. P. gas does not form gum because oxygen must be present to effect the chemical processes which result in production of gum. Gummy is simply oxidation of unstable hydrocarbons in the fuel. It only happens in the presence of air. Air is constantly being breathed into or out of the gasoline tank, as changes of atmospheric temperature cause expansion or contraction of the contents of the tank. With LPG there is no breathing of the tank, nor is there any air.

To carry this reasoning a little further, tractor operation is subject to some of the same conditions that are characteristic of standby engines. During the summer there are generally several periods of from a few days to a few months when the tractor is standing idle. This is the season when gum formation is most rapid, and when the "starting ends" are most likely to be lost by evaporation. Both conditions go with high temperature. But neither trouble is experienced with butane or propane.

The same conditions occur with irrigation pumping engines, as well as with trucks and passenger cars which have long periods of idleness between seasons of use.

In any engine service of intermittent type the use of propane offers reliability and clean operation that is worth at least as much to the operator as the possible saving in cost.

### LPG Saves a Life As Truck Overturns

A truck, operated by Film Transit Inc., Memphis, overturned into a drainage ditch one night on its route between Greenville, Miss., and Memphis. It lay there with its wheels in the air, and the driver, caught in the cab, was thankful that the truck was operating on LPG instead of gasoline. As it was, no fuel escaped, but with the gasoline tank in this model located under the seat, it might have been different.

This 1951 Chevrolet operates on a regular schedule of 330 miles per night, and has now gone more than 350,000 miles. It was converted about a year ago. As has been quite common with this model, valve trouble developed due to the stems running too dry. Installation of stellite seats and an overhead oiling system cured the trouble and prevented its recurrence.

In the same fleet are three other converted trucks, a 1953 Chevrolet, a GMC, and an International. The more recent model Chevrolet, having a different valve mechanism, has had no valve trouble.

### Diamond T to Produce Heavy Duty IHC Trucks

Arrangements have been completed between International Harvester and Diamond T Truck Co. whereby the specialized heavy duty models of IHC trucks, now being manufactured at the Harvester factory branch

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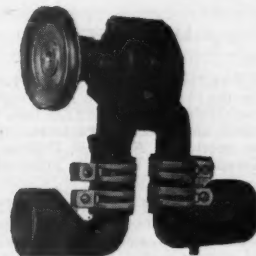
Butane Manifolds for Allis Chalmers "W," "WC," "WA," "WF," "UC" & "MC"

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DISTRICT SALES REPRESENTATIVES! Important manufacturing group needs representatives with entree to volume buyers for both gas and electric ranges. Reply Associated, Box 1634, Muskogee, Oklahoma.

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FOR THE BEST DOMESTIC TANKS — STORAGE TANKS — TRUCK TANKS — Call, or Write Master Tank & Storage, P. O. Box 5146, Prospect 2441, Dallas, Texas.

IMMEDIATE DELIVERY 1949 CLASS VM-4 Gasair machine, capacity 10,000 CFM. New condition, used for stand-by purposes only. \$1,600 including all factory recommended spare parts. Olympic Gas Company, 1210 Water St., Port Townsend, Wash.

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FOR SALE: PIPE THREAD COMPOUND. Due to a special purchase we can supply you with a quality compound at a real savings. 5¢ pail only \$6.25. 100# or more prepaid. Cash, no C.O.D. SOUTHWEST GAS EQUIPMENT, LIBERAL, KANSAS.

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## FOR SALE — TRUCKS - TRAILERS

FOR SALE 4500 WATER CAPACITY PROPANE transport, tandem, air brakes, 10:00 tires, twin tanks, perfect condition, \$4,000. Vincent Elliott, Box 1, Phone 1263, Vinita, Oklahoma.

USED 1954 INT. R-162, WITH MODEL 100, 1400 W.G. twin propane tanks, Viking mechanical seal pump, hose, piped complete, Ensign propane carburetion, excellent condition with only 18,000 miles. Only \$3,550.00. Meter can be added at additional price. White River Distributors, Inc., Batesville, Ark.

USED INT. L-164 WITH BRAND NEW 1600 W.G. twin propane tank equipped with large rear cabinet (Model 200). Truck is in excellent condition with only 27,000 miles. Price for truck and tank only \$2,695.00. Can plumb complete with pump, hose, meter, carburetion, etc. to your specifications, using all new equipment. HURRY—THIS UNIT WON'T LAST 2 days after this ad. Call White River Distributors, Inc., Phone 570, Batesville, Ark.

TRAILERS—2 6200 GAL. PROPANE, BUTER-Built, M.C.C. 330, Code U69 \$5500.00 each. 1 6670 gal. Propane, U69, built same as Butler \$6100.00. 1 6017 Columbia, U69, \$6600.00. Tractors—1 1952 GMC Diesel, perfect shape \$4700.00. 2 1951 IHC L 195/471 GMC Diesel engines \$4000.00 ea. Truck—1 KS7 IHC w/1200 gal. WC. - U69 tank \$1900.00. Make a good spare truck. B. I. WHITLOCK BUTANE, Box 326, Stafford, Kansas.

## WHATEVER IT IS

YOU HAVE FOR SALE, WANT TO BUY OR TRADE OR FIND — you can do it quickly, easily, with a B-P News classified ad.



## FOR SALE—TRUCKS-TRAILERS - Cont.

**TRINITY'S NEW EXCLUSIVE MODEL** #106 with sectional skirting - 1700 WG capacity W-250 - ICC MC-330 complete with pump, printometer, remote Okadee valves, clutch, power take-off and throttle. Completely installed on new factory LPG powered RP-162 International chassis. Immediate delivery, \$5,100.00 F.O.B. Trinity Steel Co., Inc., 3301 S. Lamar St., HUnter 8321, Dallas, Texas.

**BEFORE YOU BUY A NEW PROPANE** delivery truck, call us collect for prices. **IMMEDIATE DELIVERY, EASY TERMS.** Five Models to choose from, 600 to 2000 gallon. Furnished with or without truck. All makes and models of trucks are sold by us at prices that save you up to \$600.00. Our delivery trucks are being used the **WORLD OVER** by dealers large and small. **WHITE RIVER DISTRIBUTORS, INC.,** Phone 570, Batesville, Ark.

**COMPARE OUR PRICES!** NEW 1400 W. G. twin Model 100 propane tank, piped complete with Viking mechanical seal pump, P.T.O. and spline jack shaft, lights, filler hose, white enamel, Neptune No. 431 meter. Mounted on NEW, 1954 Chev. 2 ton, Model 6403, 2-speed axle, ready to use! \$4,195.00, excise tax paid. **EASY TERMS.** White River Distributors, Inc., Batesville, Ark.

**THIS IS IT—NEW 1954 INTERNATIONAL** RP-162, factory equipped for LPG, 2-speed axle, complete with 1400 W.G. twin Model 100 propane tank, Viking mechanical seal pump, filler hose, P.T.O. and spline shaft, piped complete, painted, clearance lights installed, \$4,095.00, excise tax paid. White River Distributors, Inc. Phone 570, Batesville, Ark.

**1700 W. G. TWIN MODEL 100 PROPANE** tank, P.T.O., spline shaft, Viking mechanical seal pump, Neptune No. 433 Print-O-Meter, complete, piped and installed on NEW 1954 International RP-162, LPG powered, long wheelbase, 2-speed axle, ready to use. \$4,790.00. **SAVE \$400.00 to \$800.00 on this unit. EASY TERMS.** **WHITE RIVER DISTRIBUTORS, INC.,** Batesville, Ark.

**THIS IS THE ONLY PROPANE TRUCK** ON THE MARKET TODAY with all of these features: Model 200 with rear cabinet which houses hose reel, meter, hose, and all control valves in rear for easy operation. Why have your meter, hose, reel, etc., installed on the side and have to drag the hose under, over or around truck to service customer that is on the "wrong side of the street"? This unit is available in sizes from 1250 to 1600 W. G. twin, with any make or model pump, meter, hose reel, etc., that you choose. **PRICE?** From \$100.00 to \$500.00 savings under competitive makes that do not have these features. **WEIGHT?** From 200 to 1000 lbs. under competitive makes that do not have these features. Call today. Easy terms! White River Distributors, Inc. Phone 570, Batesville, Ark.

**NEW: IMMEDIATE DELIVERY, 1400 WG** U69 propane extra lightweight twin barrel delivery unit. Mounted on new 1954 2-ton, 2-speed Chevrolet truck with big engine. Fill and vapor hose assemblies—Viking Mechanical Seal Pump—Power take-off assembly and motor fuel tank. **READY TO GO FOR \$3970.00 tax paid.** Also available at low extra cost: meters, fire extinguisher and L. P. carburetion. American Tank & Manufacturing Co., 2136 West Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

**REAL SAVINGS ON COMPLETE PACKAGE UNIT FOR IMMEDIATE DELIVERY.** 1400 WG U-69 twin delivery unit with trim skirting, mounted on new 1954 factory LPG powered International, RP-162 chassis. Two speed axle, 50-gallon recessed fuel tank, P.T.O., spline jack shaft, Viking mechanical seal pump, 50' filler hose and ICC lights. Painted gleaming aluminum over red oxide. Ready to start making you money for only \$4,085.00, including taxes, F.O.B. Denton. Meters, fire extinguisher and cabineting available at low extra cost. Call **NOR-TEX PRODUCTS COMPANY** collect, C-5416, Denton, Texas.

## FOR SALE—TRUCKS-TRAILERS - Cont.

**SPECIAL: AMERICAN "BETTER-BILT"** extra lightweight 1500 water gallon U69 propane twin barrel delivery unit, with Viking Mechanical Seal Pump—Neptune Print-O-Meter—fill and vapor hose assembly—mounted on new 1954 2-ton, 2-speed GMC chassis with 8.25 tires—**READY FOR SERVICE. PRICED AT \$4475.00 tax paid FOB Dallas.** Other sizes available at comparable low cost. American Tank & Manufacturing Co., 2136 W. Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

**FOR THE BIG HAUL . . . NEW 1800 WG** U-69 NOR-TEX twin delivery unit. Equipped for service with trim skirting, 50-gallon recessed fuel tank, ICC lights, Viking mechanical seal pump, P.T.O. and splines jack shaft. Mounted on brand new factory LPG powered International RP-172 chassis with the big 282 LPG engine. 5th overdrive transmission, two speed axle, 9:00 tires all around, heavy duty rear springs. All ready to start delivering gas for only \$5,125.00, including taxes, F.O.B. Denton. Call **NOR-TEX PRODUCTS COMPANY** collect, C-5416, Denton, Texas.

**BUYING YOUR FIRST DELIVERY** truck tank? Get the facts on Trinity's New Model #104 Twin 1400 WG capacity 250# WP complete with pump, printometer, hose, plumbing, etc., installed on new 1954 135 HP Chevrolet chassis—ready to haul gas today—\$4,300.00 F.O.B. Trinity Steel Co., Inc., 3301 S. Lamar St., HUnter 8321, Dallas, Texas.

**FROM JAPAN TO ITALY OUR TRUCKS** are known as the **WORLD'S FINEST.** All units are completely tested for performance and leaks by **PUMPING GAS** before they leave our shop. We train your drivers to use all equipment which you buy from us. We are in the gas business. Let our years of experience work for you and **SAVE YOU MONEY. IMMEDIATE DELIVERY—EASY TERMS.** White River Distributors, Inc., Batesville, Ark.

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**PAN AMERICAN CASUALTY COMPANY**  
T. E. Gammage, Sr., Pres.  
P.O. Box 1662 Houston, Texas

at Emeryville, Calif., will also be produced for the company's eastern marketing divisions at the Diamond T plant in Chicago.

Increasing demand for these super-trucks in the East has made such production desirable, but it was not practical to combine this operation with the assembly line procedure at the Fort Wayne, Ind., plant in which the quantity-production IHC trucks were manufactured.

The special trucks to be produced for Harvester at the Diamond T plant include the LPG Hall-Scott equipped model which has comprised a large percentage of the IHC output at Emeryville. These have run as high as 325 hp and have been widely used in Pacific Coast lumbering and highway transport operations. These trucks will be marketed only through the sales organization of IHC.

## Use of LPG As Farm Fuel Gaining in Texas

About 30 to 35% of farm gasoline accounts in the Rio Grande valley of Texas have switched from gasoline to liquefied petroleum gas for farm machinery, according to National Petroleum News. By 1957 the conversion rate is expected to reach 85%.

It is believed a total of more than 1 million gal. per month of L. P. gas now is sold to farmers in the area.

Biggest reason for the switchover seems to be price: about 8.5 cents per gallon for L. P. gas, compared to about 17 cents for gasoline. In addition, distributors have been "carrying" the farmers' conversion costs, letting them pay the costs off out of savings on price.

Some farmers also report big savings on maintenance on equipment through use of L. P. gas.

## Two Carburetors Better On Large Engines

When converting large engines of the "in line" type, advantages in both power and economy can be gained by installing two carburetors, each serving half of the cylinders. This has long been recognized in gasoline carburetion, but it is also true with LPG.

Pre-expansion takes place in all manifolds, due to absorption of heat by the fuel charge. This reduces the weight of fuel on the intake stroke. With a single carburetor, the fuel must travel farther to get to the end cylinders, with longer exposure to heat and greater pre-expansion. Use of two carburetors permits a shorter run from the carburetor to the cylinder, with less heat absorption.

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FOOTRING MASTIC

*Tell how Red Primer  
#4452-A inhibits rust-  
and about the tough  
moisture barrier ROSKOTE  
provides - with long life  
added to L.P. gas cylinders,  
as proven by inspection of  
cylinders coated 3 yrs ago.  
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ELIMINATES DRAFT TROUBLES

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